# Chapter 1 Checklist Report by Serial

## 1. EQUIPMENT

Airflow indication/alarm system: Analog.

## 2. MODEL / VERSION OF SYSTEM

Analog

## 3. PURPOSE

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304.  

B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew.  

C. Determine the ability of the ship’s crew

## 4. REFERENCES

PMS: MIP 4361/002, MIP 4361/003, and MIP 4361/051. Technical Manuals:  


Other:  

- SCD 74628 "Approved Installation Fielding Plan for Surface Ships," [formerly MACHALT No. 593-59006 (ECP

## 5. SUBSYSTEM

## 6. INSPECTORS REQUIREMENTS

Ship to provide inspector with Equipment Guide Lists (EGLs) of all airflow alarm panels and sensors.

## 7. UNDERWAY

The Ship is to provide two knowledgeable IC personnel with radios to demonstrate the airflow alarms. The ship should expect approximately 15 minutes per airflow alarm.

## 8. DESCRIPTION OF INSPECTION

## 9. PREREQUISITES

Ship to provide inspector with Equipment Guide Lists (EGLs) of all airflow alarm panels and sensors.

## 10. APPLICABLE INSPECTION PROCEDURES

Alarms for occupational health spaces that were inoperable will be considered a Priority 1 Safety deficiency with a maximum EOC score of 0.2. Alarms for Combat Systems equipment will be considered a Priority 2 deficiency with an EOC score up to 0.9.

## 11. SUPPORT SERVICES

2 each, two-way radios.

## 12. LOGISTICS / FUNDING

## 13. SECURITY CLEAR

UNCLAS

## 14. SHIP CLASSES

ALL

## 15. SHIP CLASSES

## 16. CHECKLIST ITEMS

108 (i) SCD / MACHALT Accomplishment:

### References:

- GSO 2004, 437d-Par. 3.1, 6.1, and 14.1 of SCD 74628 [formerly MACHALT No. 593-59006 (ECP No. 443)]. - Par. 3.1, 6.1, and 14.1 of SCD 78209 [formerly MACHALT No. 593-59006 (ECP No. 443)].

### Notes:

- All components of each MACHALT kit were installed

---

Wednesday, June 05, 2013
107 (h) Sensor: References: MIP 4361/002, A-9; MIP 4361/003; and MIP 4361-051. (1) Pinwheel sensor was correctly matched with airflow panel. 0-1K meter corresponds to Sensor No. 917-1-002 and Panel No. 62413-005. 0-5K corresponds to Sensor No. 4417-1-002 and Panel No. 106 (g) Audible and Visual Alarm Labels: Identified at their respective locations by a label. References: GSO 2004, 602].

105 (f) Remote/Extension Alarms. Remote/extension audible and visual alarms of the IC/SM alarm switchboard were activated in Central Control Station (CCS)/Damage Control Central (DCC), Enclosed Operating Station (EOS), etc. (as applicable). References: GSO 2004, 437d. NOTE: Location of remote/extension alarms only in an EOS are for ships not having a CCS/DCC.

104 (e) Airflow Alarm Operational Test per MIP 4361/002, A-10 OR 4361/051, A-7: References: MIP 4361/002, A-10 or MIP 4361/051, A-7. (1) Red alarm indicator lamp illuminates. (2) Local/Panel audible alarm sounds. (3) Remote audible and visual alarms sound (i.e., bell, strobe light, beacon, etc.). (4) Red flag drops. (5) Red and bla

103 (d) Warning Label Plate: References: MIP 4361/002, A-10; MIP 4361/003, A-3; MIP 4361/051, A-7. -GSO 2004, 437d. (1) A warning label plate was installed in a prominent location on the exterior of the access door to the monitored compartment. (2) The warning label plate was in

102 (c) Airflow Indication/Alarm Set Point (ASP) Data Label Plate: References: MIP 4361/002, A-10 or 4361/051, A-7. (1) A label plate was installed on or in close proximity to the airflow control panel. (2) The following information was included on the data label plate: Monitored Compartment [noun name]/Circuit Numbe

101 (b) Airflow Indication/Alarm Panel Location: Panel was located external to the monitored compartment and adjacent to the access. References: GSO 2004, 437d. NOTE: Locating the panel in CCS/DCC, vice adjacent to the access, is not "fail safe." Personnel cannot easily verify airflow before entry into potentially hazardous atmospheres during periods when alarms are not signalling b

100. (a) Installation: The following spaces had required audible and visual exhaust ventilation airflow alarm systems: Alcohol Storerooms; Paint Mixing and Issue Rooms; Flammable Liquid Issue and Storerooms; Ship's Store Flammable Material Storerooms; H

References: GSO 2004, 437d. -NSTM 510, 510-6.1.15; 510-7.1.12. NOTE: Supply ventilation airflow alarm systems installed in radar array rooms, combat information centers, and other electronics rooms are not for protection of personnel, but for protectio
# Chapter 1 Checklist Report by Serial

**NEP** VT0011

## 1. EQUIPMENT

Airflow indication/alarm system: Digital.

## 2. MODEL / VERSION OF SYSTEM

Digital (DYNALEC, CENTRON, or HENSCHEL).

## 3. PURPOSE

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304.  
B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew.  
C. Determine the ability of the ship’s crew

## 4. REFERENCES

PMS: MIP 4361/002, MIP 4361/003, and MIP 4361/051.  
NAVSEA Dynalec Model No. 62413-100; Centron; Henschel Model No. 20-300-1.

## 5. SUBSYSTEM

Dynalec Model No. 62413-100; Centron; Henschel Model No. 20-300-1.

## 6. INSPECTORS REQUIREMENTS

Ship to provide inspector with Equipment Guide Lists (EGLs) of all airflow alarm panels and sensors.

## 7. UNDERWAY

The Ship is to provide two knowledgeable IC personnel with radios to demonstrate the airflow alarms. The ship should expect approximately 15 minutes per airflow alarm.

## 8. DESCRIPTION OF INSPECTION

Alarms for occupational health spaces that were inoperable will be considered a Priority 1 Safety deficiency with a maximum EOC score of 0.2.  Alarms for Combat Systems equipment will be considered a Priority 2 deficiency with an EOC score up to 0.9.  

## 9. PREREQUISITES

Ship to provide inspector with Equipment Guide Lists (EGLs) of all airflow alarm panels and sensors.

## 10. APPLICABLE INSPECTION PROCEDURES


## 11. SUPPORT SERVICES

2 each, two-way radios.

## 12. LOGISTICS / FUNDING

Alarms for occupational health spaces that were inoperable will be considered a Priority 1 Safety deficiency with a maximum EOC score of 0.2.  Alarms for Combat Systems equipment will be considered a Priority 2 deficiency with an EOC score up to 0.9.  

## 13. SECURITY CLEAR

UNCLASSIFIED

## 14. SUPPORT SERVICES

2 each, two-way radios.

## 15. SHIP CLASSES

ALL

## 16. CHECKLIST ITEMS

<table>
<thead>
<tr>
<th>108 (i) SCD / MACHALT Accomplishment:</th>
</tr>
</thead>
</table>
| References: -GSO 2004, 437d-Par. 3.1, 6.1, and 14.1 of SCD 74628 [formerly MACHALT No. 593-59006 (ECP No. 443)].  
  Par. 3.1, 6.1, and 14.1 of SCD 78209 [formerly MACHALT No. 593-59006 (ECP No. 443)].  
  (1) All components of each MACHALT kit were installed |

## 17. ADDITIONAL INSTRUCTIONS

SAT DEG UNSAT N/A

## 18. NOTES

Wednesday, June 05, 2013
107 (h) Resistive Thermal Device (RTD)/Pinwheel Sensor: References: MIP 4361/002, A-11 & MIP 4361/051, A-6.-TM T949I-XX-MMC-010, Table 3.(1) Sensor Type (SNR) programmed into Airflow Indication/Alarm Panel matched sensor type installed: DTRD = digital RTD; ARTD = analog RTD; 1PIN = 1000 ft/min pinwheel; □ □ □ □

106 (g) Audible and Visual Alarm Labels: Identified at their respective locations by a label. References: GSO 2004, 602]. □ □ □ □

105 (f) Digital Display Error Messages: References: MIP 4361/002, A-11 & MIP 4361/051, A-6.(1) "SNR FAIL" - RTD sensor failure on primary or battery backup power.(2) "AC FAIL" - Loss of primary power.(3) "PWR FAIL" - Loss of primary and backup power.(4) "BAT FAIL" - Battery failure □ □ □ □

104 (e) Panel Self-Test (Lamp I/O Test or "Test IO"):

- MIP 4361/002, A-11 & MIP 4361/051, A-6.-GSO 2004, 437d.-ECP 443, Par. 2-3.4.1, Table 2-7, Section 2-3.(1) Battery Status LED (yellow) and Alarm Status LED (red) lamps were illuminated.(2) All 14-segment LEDs for the eight-digit alphanu □ □ □ □

103 (d) Warning Label Plate:

- MIP 4361/002, A-11 & MIP 4361/051, A-6.-GSO 2004, 437d.(1) A warning label plate was installed in a prominent location on the exterior of the access door to the monitored compartment.(2) The warning label plate was inscribed as follows □ □ □ □

102 (c) Airflow Indication/Alarm Set Point (ASP) Data Label Plate:

- MIP 4361/002, A-11 & MIP 4361/051, A-6.(1) A label plate was installed on or in close proximity to the airflow control panel.(2) The following information was included on the data label plate: Monitored Compartment [noun name]/Circuit Nu □ □ □ □

101 (b) Airflow Indication/Alarm Panel Location: Panel was located external to the monitored compartment and adjacent to the access. References: -GSO 2004, 437d.NOTE: Locating the panel in CCS/DCC, vice adjacent to the access, is not "fail safe." Personnel cannot easily verify airflow before entry into potentially hazardous atmospheres during periods when alarms are not signalling b □ □ □ □

100. (a) Installation: The following spaces had required audible and visual exhaust ventilation airflow alarm systems: Alcohol Storerooms; Paint Mixing and Issue Rooms; Flammable Liquid Issue and Storerooms; Ship's Store Flammable Material Storerooms; H References: -GSO 2004, 437d.-NSTM 510, 510-6.1.15; 510-7.1.12.NOTE: Supply ventilation airflow alarm systems installed in radar array rooms, combat information centers, and other electronics rooms are not for protection of personnel, but for protecio □ □ □ □
## Chapter 1 Checklist Report by Serial

**NEP VT0012**

### 1. EQUIPMENT

Airflow indication/alarm system ILS Support.

### 2. MODEL / VERSION OF SYSTEM

Analog or digital.

### 3. PURPOSE

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, S 7304. B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew. C. Determine the ability of the ship’s crew

### 4. REFERENCES


### 5. SUBSYSTEM

### 6. INSPECTORS REQUIREMENTS

### 7. UNDERWAY

Conducted after physical inspection of airflow alarm systems.

### 8. DESCRIPTION OF INSPECTION

### 9. PREREQUISITES

### 10. APPLICABLE INSPECTION PROCEDURES

**A.** To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, S 7304. **B.** To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew. **C.** Determine the ability of the ship’s crew

### 11. LOGISTICS / FUNDING

### 12. SECURITY CLEAR

UNCLAS

### 13. SUPPORT SERVICES

### 14. SHIP CLASSES

ALL

### 15. CHECKLIST ITEMS

<table>
<thead>
<tr>
<th>CHECKLIST ITEMS</th>
<th>ADDITIONAL INSTRUCTIONS</th>
<th>SAT</th>
<th>DEG</th>
<th>UNSAT</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>102 (c) Equipment Guide Lists (EGLs):</td>
<td>References: - MRC 4361/002; 4361/003, and 4361/051(1) An EGL was available for the airflow indication/alarm panels.(2) An EGL was available for the airflow alarm sensors. <strong>NOTE:</strong> Airflow indication/alarm panels and sensors require separate EGLs because</td>
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</tr>
<tr>
<td>101 (b) Preventive Maintenance System (PMS):</td>
<td>References: - MRC 4361/002; 4361/003, and 4361/051(1) PMS was installed for MIP 4361. <strong>NOTE:</strong> The install will be verified by having the Ship’s Force show the Sked Database to the INSURV inspector.(2) An Airflow Alarm System Log was filled out mont</td>
<td></td>
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<tr>
<td>100. (a) Technical Manuals: Technical manuals were onboard for each airflow alarm system installed.</td>
<td>References: - MRC 4361/002; 4361/003, and 4361/051</td>
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</tr>
</tbody>
</table>
### 1. EQUIPMENT

Fan Room.

### 2. MODEL / VERSION OF SYSTEM

None.

### 3. PURPOSE

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304.  
B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew.  
C. Determine the ability of the ship’s crew to provide an escort.

### 4. REFERENCES

Other:-NAVSEA 59A0-AB-GOS-010/GSO "General Specifications for Overhaul of Surface Ships (GSO 2004)", Sections 070, 075, 507, & 512.-NSTM 505.-NSTM 510 "HVAC Systems for Surface Ships".

### 5. SUBSYSTEM

6. INSPECTORS REQUIREMENTS

### 6. UNDERWAY

This event will require 2 to 3 days to complete on most ships. The Ship is to provide an escort.

### 8 DESCRIPTION OF Inspection

### 9. PREREQUISITES

### 11. APPLICABLE INSPECTION PROCEDURES

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304.  
B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew.  
C. Determine the ability of the ship’s crew to provide an escort.

### 12. LOGISTICS / FUNDING

### 13. SECURITY CLEAR

UNCLAS

### 14. SUPPORT SERVICES

None.

### 15. SHIP CLASSES

ALL

### 16. CHECKLIST ITEMS

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th>SAT</th>
<th>DEG</th>
<th>UNSAT</th>
<th>N/A</th>
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</tr>
</thead>
<tbody>
<tr>
<td>116 (q)</td>
<td>Grounding straps were not missing, painted, or physically damaged.</td>
<td>Reference: 300-2.2.1.2 of NSTM 300R8. NOTE: Ground straps are not required when metal enclosing cases or frames are in contact with one another and the metal structure of the ship. Ground straps are required if fan motors have rubber expansion joints an</td>
<td>☐</td>
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<tr>
<td>103 (d)</td>
<td>Deck was dry.</td>
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<tr>
<td>104 (e)</td>
<td>There was no gear adrift and the space was not used for storage or an office.</td>
<td>References:-NSTM 510, 510-7.2.1.Scoring: Stowage of combustible liquids, combustible solids (e.g., paper, cardboard, and wood) and/or flammable materials in the space is a Priority 1 Safety deficiency.</td>
<td>☐</td>
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</tr>
<tr>
<td>105 (f)</td>
<td>All filter cover fasteners were in place.</td>
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</tbody>
</table>

### 17. ADDITIONAL INSTRUCTIONS

### 18. NOTES

Wednesday, June 05, 2013
106 (g) Pipe lagging was in place and dry.

107 (h) Cooling coils were clean.

108 (i) Manual damper handle was operational and not tied open.

109 (j) Differential pressure gages were intact and operational.

110 (k) Drain pans were clean and free of corrosion.

111 (l) Ducting was intact, not damaged, and free of corrosion.

112 (m) Expansion joints were not painted or physically damaged.

113 (n) Fan nose cones were in place.

102 (c) Bullseye was posted.

115 (p) Foundation frame/brackets were in good condition and free of corrosion.

101 (b) CCOL was posted.

117 (r) Vent inspection covers were in place.

118 (s) Electrical fans were not installed or wired backwards. Scoring: Missing or loose protective screens allowing access to rotating fan parts is a Priority 1 Safety deficiency.

119 (t) Protective screens were in place and not damaged.

120 (u) All protective screen fasteners were in place. Scoring: Unsheathed electrical wiring, missing junction/connecting box covers, or exposed electrical conductors is a Priority 1 Safety deficiency.

121 (v) Resilient mounts were not painted.

122 (w) Lagging was properly stenciled.

123 (x) Pipe and duct stenciling was in place and correct.

124 (y) Electrical connecting box fasteners were in place. Scoring: If all light fixtures in a fan room are inoperable, it is a Priority 2 Safety deficiency.

125 (z) Thermostats were operational.

126 (aa) Drain pans were not clogged and were free of corrosion. Scoring: If all light fixtures in a fan room are inoperable, it is a Priority 2 Safety deficiency.

100. (a) Light fixtures were operational.

114 (o) Proper filters were installed in appropriate fans.
# Chapter 1 Checklist Report by Serial

**NEP** VT0021

## 1. EQUIPMENT

Fan Coil Units (FCUs) inside Fan Rooms.

## 2. MODEL / VERSION OF SYSTEM

## 3. PURPOSE

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304.  
B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew.  
C. Determine the ability of the ship’s crew

## 4. REFERENCES

(a) S6230-CC-MMA-010.  
(b) S6435-L4-OMI-010.  
(c) S9514-D2-MMC-010.  
(d) S9514-D2-MMC-010.  
(e) S9514-FQ-MMC-010.  
(f) S9514-A5-MMA-010.  
(g) S9514-EA-MMA-010.  
(h) MIP 6641/005, MRC A1JW (M-3).  
(i) MIP 6641/005, MRC W31G (Q-2/S-2).  
(j) MIL-PRF-24775A.

NSTM, SHIPS DRAWINGS

## 5. SUBSYSTEM

## 6. INSPECTORS REQUIREMENTS

## 7. UNDERWAY

This event is part of the Fan Rooms event. Fan Rooms will require 2 to 3 days to complete on most ships. The Ship is to provide an escort.

## 8 DESCRIPTION OF INSPECTION

## 9. PREREQUISITES

## 10. APPLICABLE INSPECTION PROCEDURES

## 11. SUPPORT SERVICES

None.

## 12. LOGISTICS / FUNDING

## 13. SECURITY CLEAR

UNCLAS

## 14. SHIP CLASSES

ALL

## 15. CHECKLIST ITEMS

### 113 (n)

Grounding strap was provided and mounted properly from unit to hull and not corroded.

References: S9514-D2-MMC-010.  
S9514-FQ-MMC-010.  
MIL-PRF-24775A. Scoring: Missing, loose, or unattached grounding straps is a Priority 1 Safety deficiency.

<table>
<thead>
<tr>
<th>SAT</th>
<th>DEG</th>
<th>UNSAT</th>
<th>N/A</th>
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### 112 (m)

FCU drain was not sweating. Drain was secured to FCU properly and terminated properly. Condensate was not leaking out of FCU panels.

Drain pipe section of applicable ship specification.

<table>
<thead>
<tr>
<th>SAT</th>
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</table>

### 111 (l)

Thermostat was set to design setpoint (72 degrees F). There were no airflow blockages or dirt/debris buildup.

References: S6230-CC-MMA-010.  
S9514-D2-MMC-010.  
S9514-FQ-MMC-010.

<table>
<thead>
<tr>
<th>SAT</th>
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<tbody>
<tr>
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</tbody>
</table>
110 (k) Air filter was present and not loaded with dirt. There were no blockages to airflow. Metal air filters were free of corrosion and the inlet side was coated with oil. Disposable filters may be installed instead of metal filters; however, air fi

109 (j) Chilled water piping was complete, dry, not damaged, and free of deterioration.

108 (i) FCU chilled water solenoid valve operated properly. The manual override should align for automatic thermostat control as follows: 1/2" and 3/4" ASCO valve shaft should be pressed in and turned fully counter-clockwise. Larger ASCO valves, sta

107 (h) When FCU was energized, the air filter gage (applicable to FCUs with gage provided; see applicable ship specification HVAC section to see if gage is required) indicated above zero but below the red region (i.e., dirty filter condition). There wer

106 (g) When FCU was energized, there was no unusual loud operation, vibration, or mechanical noise.

105 (f) When FCU was energized, none of the F3, F4, or F5 fuse lamps were illuminated (these illuminate when the fuses serving the heater element are blown).

104 (e) When FCU was energized, neither the F1 nor the F2 fuse lamps were illuminated (these illuminate when the fuses serving the low voltage control circuit are blown).

103 (d) Stop and Start pushbuttons (LVP Types) or On/Off switch (LVR Types) functioned properly. When energized, fan should turn on and "ON" indicator lamp illuminates. When secured, fan should turn off and "ON" indicator lamp does not illuminate.

102 (c) FCU housing was intact and not missing hardware, and was free of damage and corrosion.

101 (b) FCU intake and outlet was free of damage and airflow obstruction.

100. (a) FCU mounting hardware was intact and in good operating condition.
Chapter 1 Checklist Report by Serial

VT0022

1. EQUIPMENT
Fan Coil Assemblies (FCAs) inside Fan Rooms

2. MODEL / VERSION OF SYSTEM

3. PURPOSE
A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304. 
B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew.
C. Determine the ability of the ship’s crew

4. REFERENCES
(a) 0948-LP-119-1010.
(b) S6435-L4-OMI-010.
(c) MIP 6641/005, MRC A1JW (M-3).
(d) MIP 6641/005, MRC W31G (Q-2/S-2).
(e) S6230-A8-MMA-010.
(f) S6230-BB-MMO-010.
(g) S6230-A8-MMA-010.
(h) S9514-DS-MMA-010.
(i) S9514-DV-MMC-010.
(j) MIL-PRF-23798D.

5. SUBSYSTEM

6. INSPECTORS REQUIREMENTS

7. UNDERWAY

8 DESCRIPTION OF INSPECTION

9. PREREQUISITES

10. APPLICABLE INSPECTION PROCEDURES

11. LOGISTICS / FUNDING

12. SECURITY CLEAR

13. SUPPORT SERVICES

14. SHIP CLASSES

15. CHECKLIST ITEMS

16. ADDITIONAL INSTRUCTIONS

17. NOTES

Wednesday, June 05, 2013

Page 1 of 2
107 (h) Air filter was present and not loaded with dirt. There were no blockages to airflow. Metal air filters were free of corrosion and the inlet side was coated with oil. Disposable filters may be installed instead of metal filters; however, air fil


106 (g) Chilled water piping was complete, dry, not damaged, and free of deterioration.

Pipe section of applicable ship specification.

105 (f) FCA chilled water solenoid valve operated properly.
The manual override should align for automatic thermostat control as follows: 1/2” and 3/4” ASCO valve shaft should be pressed in and turned fully counter-clockwise.- Larger ASCO valves, sta

References:-0948-LP-119-1010.-S6435-L4-OMI-010.

104 (e) When FCA was energized, the air filter differential pressure gage (applicable to FCAs with gage provided; see applicable ship specification HVAC section to see if gage is required) indicated above zero but below the red region (i.e., dirty filter


103 (d) When FCU was energized, there was no unusual loud operation, vibration, or mechanical noise.

102 (c) FCA housing was intact and not missing hardware, and was free of damage and corrosion.

References:-Mil-PRF-23798D.

101 (b) FCA intake and outlet was free of damage and airflow obstruction.

100. (a) FCA mounting hardware was intact and in good operating condition.
## Chapter 1 Checklist Report by Serial

### NEP VT0023

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<thead>
<tr>
<th>1. EQUIPMENT</th>
<th>2. MODEL / VERSION OF SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Ventilation (not elsewhere classified)</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>3. PURPOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304. B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew. C. Determine the ability of the ship’s crew</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. REFERENCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) OPNAVINST 5100.19E. (b) OPNAVINST 9640.1A, &quot;Shipboard Habitability Program&quot; [Applies only to U.S. Navy ship designs and commissioned ships over 150 feet in length or manned by 100 or more persons]. (c) NSTM 510. (d) MIP 6641/005, A-18 [This MIP is not applicable to nuclear support facility spaces].</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. SUBSYSTEM</th>
<th>6. INSPECTORS REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhaust and supply ventilation systems.</td>
<td>Basic understanding of heating, ventilation &amp; air conditioning (HVAC) systems, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.</td>
</tr>
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<tr>
<th>7. UNDERWAY</th>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>8. DESCRIPTION OF INSPECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual inspection of ventilation systems.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9. PREREQUISITES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>10. APPLICABLE INSPECTION PROCEDURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual inspection of ventilation systems.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>11. SUPPORT SERVICES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flashlight, telescoping inspection mirror, and hearing protection.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12. LOGISTICS / FUNDING</th>
</tr>
</thead>
<tbody>
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</table>

<table>
<thead>
<tr>
<th>13. SECURITY CLEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNCLASSIFIED</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14. SUPPORT SERVICES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>15. SHIP CLASSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>16. CHECKLIST ITEMS</th>
<th>17. ADDITIONAL INSTRUCTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>104 (e) An organization was established on the ship to operate and maintain the equipment provided for heating, ventilating, and air conditioning. The responsibilities of this organization should include operation, testing, inspection, and maintenance of</td>
<td>References: - NSTM 510, 510-1.8.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SAT</th>
<th>DEG</th>
<th>UNSAT</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐</td>
<td></td>
<td></td>
<td>☐</td>
</tr>
</tbody>
</table>

| 103 (d) Heating, ventilation, and air conditioning (HVAC) systems were operating. | References: - NSTM 510. |

<table>
<thead>
<tr>
<th>SAT</th>
<th>DEG</th>
<th>UNSAT</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐</td>
<td></td>
<td></td>
<td>☐</td>
</tr>
</tbody>
</table>

| 102 (c) Vent duct systems were clean for the air conditioning return/recirc return duct between the terminal and filter for all air conditioned spaces. [Only CVN 71 and later of the CVN 68 Class; CG 47, DDG 51, DDG 993, LHD 1, LPD 17, FFG 7, MHC 51, and | References: - MIP 6641/005, A-18 [This MIP is not applicable to nuclear support facility spaces] |

<table>
<thead>
<tr>
<th>SAT</th>
<th>DEG</th>
<th>UNSAT</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐</td>
<td></td>
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<td>☐</td>
</tr>
</tbody>
</table>

Wednesday, June 05, 2013
101 (b) Ductwork was in good condition, had the correct routing, and was in place (i.e., not missing).

References:
- NSTM 510. MIP 6641/005, A-18 [This MIP is not applicable to nuclear support facility spaces]

100. (a) Vent ducts were free of blockage and unauthorized alterations.

References:
- OPNAVINST 5100.19E, C0102.e.
### Chapter 1 Checklist Report by Serial

**NEP VT0030**

<table>
<thead>
<tr>
<th>1. EQUIPMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanitary Ventilation Systems (i.e., water closets, wash rooms, and showers).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. MODEL / VERSION OF SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Exhaust Ventilation (GEV).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. PURPOSE</th>
</tr>
</thead>
</table>
| A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, §7304.  
B. To implement process-focused inspection when feasible to strengthen the capability of the ship's crew.  
C. Determine the ability of the ship's crew |

<table>
<thead>
<tr>
<th>4. REFERENCES</th>
</tr>
</thead>
</table>
(c) LHD Ship Specification, A |

<table>
<thead>
<tr>
<th>5. SUBSYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhaust ventilation terminals/ducts.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. INSPECTORS REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic understanding of heating, ventilation &amp; air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7. UNDERWAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>This event will require two days to complete.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8 DESCRIPTION OF INSPECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9. PREREQUISITES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design exhaust air volumes (in CFM) and/or design exhaust air rates of change for each space. This information can be found on a ship's Heating, Ventilation &amp; Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship's Information B</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10. APPLICABLE INSPECTION PROCEDURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensure that the percent of the design will be the EOC score for that space. However, a space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>11. SUPPORT SERVICES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoulder bag, flashlight, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees), thermal (i.e., heated wire/element) anemometer with</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12. LOGISTICS / FUNDING</th>
</tr>
</thead>
<tbody>
<tr>
<td>The percent of the design will be the EOC score for that space. However, a space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>13. SECURITY CLEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNCLAS</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>14. SHIP CLASSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>15. SHIP CLASSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>16. CHECKLIST ITEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing air conditioning systems were balanced so that the delivered quantity of air to each compartment was not less than 90 percent, nor more than 110 percent of design quantity.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>17. ADDITIONAL INSTRUCTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>References: Section 512L of NAVSEA S9AA0-AB-GOS-010/GSO &quot;General Specifications for Overhaul of Surface Ships (GSO 2004)&quot; NOTE: Applicable unless specified differently by applicable ship class specification. The &quot;no more than 110 percent&quot; criteria only</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>18. NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAT DEG UNSAT N/A</td>
</tr>
<tr>
<td>☐ ☐ ☐ ☐</td>
</tr>
</tbody>
</table>

| 107 (h) Existing air conditioning systems were balanced so that the delivered quantity of air to each compartment was not less than 90 percent, nor more than 110 percent of design quantity. |

| 106 (g) New air conditioning systems were balanced so that the delivered quantity of air to each compartment was not less than 100 percent, nor more than 110 percent, of design quantity. [TRIALS ONLY] |

<table>
<thead>
<tr>
<th>16. CHECKLIST ITEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing air conditioning systems were balanced so that the delivered quantity of air to each compartment was not less than 90 percent, nor more than 110 percent of design quantity.</td>
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<tr>
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<tr>
<th>18. NOTES</th>
</tr>
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<tbody>
<tr>
<td>SAT DEG UNSAT N/A</td>
</tr>
<tr>
<td>☐ ☐ ☐ ☐</td>
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</tbody>
</table>
105 (f) Duct access plates had no air leaks around them. References: MIP 6641, A-18

104 (e) Duct sections, screens, diffusers, insulation, and fasteners were not missing. References: MIP 6641, A-18

103 (d) Ventilation was designed to minimize high humidity, condensation, and odor persistence. References: Paragraph 2.2.2 of Encl (1) of OPNAVINST 9640.1A, "Shipboard Habilitability Program" [Applies only to U.S. Navy ship designs and commissioned ships over 150 feet in length or manned by 100 or more persons]

102 (c) Exhaust duct was clean of dirt and debris buildup for first 25 feet beginning at exhaust terminal. [Only CVN 71 and later of the CVN 68 Class; CG 47, DDG 51, DDG 993, LHD 1, LPD 17, FFG 7, MHC 51, and PC 1 Classes] References: MIP 6641, A-18

101 (b) Mechanical exhaust ventilation system provided one air change every four minutes (i.e., 15 air changes per hour). References: (a) Ship's HVAC drawings. (b) NAVSEA 0938-LP-018-0010 "HVAC Design Criteria Manual for Surface Ships of the U.S. Navy" (29 March 1991), Criteria Sheets 7A and 9D. (c) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, pp. 18-32 & 18-32A

100. (a) Mechanical exhaust ventilation system had measured airflow per design criteria. References: (a) Ship's HVAC drawings. (b) NAVSEA 0938-LP-018-0010 "HVAC Design Criteria Manual for Surface Ships of the U.S. Navy" (29 March 1991), Criteria Sheets 7A and 9D. (c) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, pp. 18-32 & 18-32A
# Chapter 1 Checklist Report by Serial

**NEP** VT0050

## 1. EQUIPMENT
Ventilation Plenum Preservation Inspection [CVN ONLY].

## 2. MODEL / VERSION OF SYSTEM

## 3. PURPOSE
A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304.  
B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew.  
C. Determine the ability of the ship’s crew.

## 4. REFERENCES
(a) OPNAVINST 5100.19E.  
(b) NACE International "Shipboard Corrosion Assessment Training".

## 5. SUBSYSTEM

## 6. INSPECTORS REQUIREMENTS
Inspection conducted on Wednesday in port. 10 spaces chosen by random from CCIMS database on Tuesday.

## 7. UNDERWAY
Inspect 10 ventilation plenums for preservation. Plenums are chosen at random from ship's CCIMS database.

## 8. DESCRIPTION OF INSPECTION
Ship to follow confined space entry procedures for each ventilation plenum.

## 9. PREREQUISITES

## 10. APPLICABLE INSPECTION PROCEDURES
Inspect spaces using NACE International shipboard corrosion assessment criteria.

## 11. SUPPORT SERVICES
Flashlight, inspection mirror, digital laser tape measure, and self-retracting tape measure.

## 12. LOGISTICS / FUNDING

## 13. SECURITY CLEAR
UNCLAS

## 14. SHIP CLASSES
CVN

## 15. SHIP CLASSES

## 16. CHECKLIST ITEMS
100. (a) Ship-assigned CCIMS category for ventilation plenum was accurate.

## 17. ADDITIONAL INSTRUCTIONS

## 18. NOTES

---

Wednesday, June 05, 2013
# Chapter 1 Checklist Report by Serial

**NEP**

**VT0060**

## 1. EQUIPMENT

Vehicle Stowage Area Ventilation (LHD CLASS ONLY).

## 2. MODEL / VERSION OF SYSTEM

General Exhaust Ventilation (GEV).

## 3. PURPOSE

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304. B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew. C. Determine the ability of the ship’s crew

## 4. REFERENCES

(a) Ship's Heating, Ventilation & Air Conditioning (HVAC) drawings.
(b) Ship-specific HVAC Design Criteria Manual.
(c) Ship's Heating, Ventilation & Air Conditioning (HVAC) drawings.
(d) NAVSEA "HVAC Design Criteria Manual" (LHD 5 thru 7), Design Criteria

**NSTM, SHIPS DRAWINGS**

## 5. SUBSYSTEM

Exhaust ventilation terminals/ducts.

## 6. INSPECTORS REQUIREMENTS

Basic understanding of heating, ventilation & air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.

## 7. UNDERWAY

This system is part of INSURV Event No. VT0060. This entire event will require one to two days to complete.

## 8 DESCRIPTION OF INSPECTION

Ensure all supply and exhaust ventilation systems for the space are operating. If the ventilation fans have two speeds, then take air velocity measurements at both speeds. Close all access doors/hatches/scuttles to the space before taking air velocity measurements. Design exhaust air volumes (in CFM) for each space. This information can be found on a ship's Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship's Information Book.

## 9. PREREQUISITES

A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term

## 10. APPLICABLE INSPECTION PROCEDURES

A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term

## 11. SUPPORT SERVICES

Shoulder bag, flashlight, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees), thermal (i.e., heated wire/element) anemometer with

## 12. LOGISTICS / FUNDING

LHD 5 thru 7

## 13. SECURITY CLEAR

UNCLAS

## 14. SHIP CLASSES

LHD 5 thru 7

## 15. ADDITIONAL INSTRUCTIONS

### 16. CHECKLIST ITEMS

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>SAT</th>
<th>DEG</th>
<th>UNSAT</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>102</td>
<td>Connections were provided to exhaust system to accommodate flexible hoses used for exhaust of vehicle gaseous emissions. [LHD 5 thru 7]</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>101</td>
<td>Mechanical exhaust ventilation system fans provide a 2.75 minute rate of change (i.e., 21.8 air changes per hour). [LHD 5 thru 7]</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

### 17. REFERENCES

(a) NAVSEA "HVAC Design Criteria Manual" (LHD 5 thru 7), Design Criteria No. 37.
(b) NAVSEA S9AA0-AB-GOS-010/GSO "General Specifications for Overhaul of Surface Ships (GSO 2004)", Sections 512 and 575.
100. (a) Mechanical supply ventilation system fans provide a 2.75 minute rate of change (i.e., 21.8 air changes per hour). [LHD 5 thru 7]

References:
(a) NAVSEA "HVAC Design Criteria Manual" (LHD 5 thru 7), Design Criteria No. 37.
(b) NAVSEA S9AA0-AB-GOS-010/GSO "General Specifications for Overhaul of Surface Ships (GSO 2004)", Sections 512 and 575.
# Chapter 1 Checklist Report by Serial

**NEP VT0061**

## 1. EQUIPMENT

Well Deck Area Ventilation [LHD CLASS ONLY].

## 2. MODEL / VERSION OF SYSTEM

General Exhaust Ventilation (GEV).

## 3. PURPOSE

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304. B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew. C. Determine the ability of the ship’s crew.

## 4. REFERENCES

(a) Ship’s Heating, Ventilation & Air Conditioning (HVAC) drawings. (b) Ship-specific HVAC Design Criteria Manual. (c) Ship’s Heating, Ventilation & Air Conditioning (HVAC) drawings. (d) NAVSEA "HVAC Design Criteria Manual" (LHD 5 thru 7), Design Criteria NSTM, SHIPS DRAWINGS

## 5. SUBSYSTEM

Exhaust ventilation terminals/ducts.

## 6. INSPECTORS REQUIREMENTS

Basic understanding of heating, ventilation & air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.

## 7. UNDERWAY

This system is part of INSURV Event No. VT0060. This entire event will require one to two days to complete.

## 8 DESCRIPTION OF INSPECTION

Ensure all supply and exhaust ventilation systems for the space are operating. If the ventilation fans have two speeds, then take air velocity measurements at both speeds. Close all access doors/hatches/scuttles to the space before taking air velocity measurements. Design exhaust air volumes (in CFM) for each space. This information can be found on a ship’s Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship’s Information Book.

## 9. PREREQUISITES

A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term).

## 10. APPLICABLE INSPECTION PROCEDURES

A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term).

## 11. SUPPORT SERVICES

Shoulder bag, flashlight, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees), thermal (i.e., heated wire/element) anemometer with LHD 5 thru 7

## 12. LOGISTICS / FUNDING

14. SUPPORT SERVICES

## 15. SHIP CLASSES

LHD 5 thru 7

## 16. CHECKLIST ITEMS

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>SAT</th>
<th>DEG</th>
<th>UNSAT</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>(b) Mechanical exhaust ventilation system had measured airflow of 200,000 cfm. [LHD 5 thru 7]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>(a) Mechanical supply ventilation system had measured airflow of 200,000 cfm. [LHD 5 thru 7]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## 17. ADDITIONAL INSTRUCTIONS

References:
(a) NAVSEA "HVAC Design Criteria Manual" (LHD 5 thru 7), Design Criteria No. 13. (b) NAVSEA S9AA0-AB-GOS-010/GSO "General Specifications for Overhaul of Surface Ships (GSO 2004)", Sections 512 and 575.
**Chapter 1 Checklist Report by Serial**

**NEP VT0062**

**1. EQUIPMENT**
- Lower Vehicle Stowage Area Ventilation: Aft [LPD 17 CLASS ONLY].

**2. MODEL / VERISON OF SYSTEM**
- General Exhaust Ventilation (GEV).

**3. PURPOSE**
- A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304.  
- B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew.  
- C. Determine the ability of the ship’s crew

**4. REFERENCES**
- (a) Ship’s Heating, Ventilation & Air Conditioning (HVAC) drawings.  
- (b) Ship-specific HVAC Design Criteria Manual.  
- (c) Ship’s Heating, Ventilation & Air Conditioning (HVAC) drawings.  
- (d) NAVSEA “HVAC Design Criteria Manual” (LPD 17 Only), Design Criteria NSTM, SHIPS DRAWINGS

**5. SUBSYSTEM**
- Exhaust ventilation terminals/ducts.

**6. INSPECTORS REQUIREMENTS**
- Basic understanding of heating, ventilation & air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.

**7. UNDERWAY**
- This system is part of INSURV Event No. VT0060. This entire event will require one to two days to complete.

**8 DESCRIPTION OF INSPECTION**
- Ensure all supply and exhaust ventilation systems for the space are operating. If the ventilation fans have two speeds, then take air velocity measurements at both speeds. Close all access doors/hatches/scuttles to the space before taking air velocity m
- Design exhaust air volumes (in CFM) for each space. This information can be found on a ship’s Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship’s Information Book.

**9. PREREQUISITES**
- A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term

**10. APPLICABLE INSPECTION PROCEDURES**
- A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term

**11. SUPPORT SERVICES**
- Shoulder bag, flashlight, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees), thermal (i.e., heated wire/element) anemometer wit
- LPD 17

**12. LOGISTICS / FUNDING**
- SAT DEG UNSAT N/A

**13. SECURITY CLEAR**
- UNCLAS

**14. SHIP CLASSES**
- LPD 17

**15. CHECKLIST ITEMS**
- 102 (c) There were two supply ventilation systems and two exhaust ventilation systems installed and both were operational. [LPD 17 and Follow]

**16. ADDITIONAL INSTRUCTIONS**
- References: (a) NAVSEA "HVAC Design Criteria Manual" (LPD 17 Only), Design Criteria No. 70.  
- (b) NAVSEA "HVAC Design Criteria Manual" (LPD 18 Only), Design Criteria No. 70.  
- (c) NAVSEA "HVAC Design Criteria Manual" (LPD 19 thru 22), Design Criteria No. 70.
101 (b) Mechanical exhaust ventilation system fans provide a 2.75 minute rate of change (i.e., 21.8 air changes per hour). [LPD 17 and Follow]

References:
(a) NAVSEA "HVAC Design Criteria Manual" (LPD 17 Only), Design Criteria No. 70.
(b) NAVSEA "HVAC Design Criteria Manual" (LPD 18 Only), Design Criteria No. 70.
(c) NAVSEA "HVAC Design Criteria Manual" (LPD 19 thru 22), Design Criteria No. 70.

100. (a) Mechanical supply ventilation system fans provide a 2.75 minute rate of change (i.e., 21.8 air changes per hour). [LPD 17 and Follow]

References:
(a) NAVSEA "HVAC Design Criteria Manual" (LPD 17 Only), Design Criteria No. 70.
(b) NAVSEA "HVAC Design Criteria Manual" (LPD 18 Only), Design Criteria No. 70.
(c) NAVSEA "HVAC Design Criteria Manual" (LPD 19 thru 22), Design Criteria No. 70.
# Chapter 1 Checklist Report by Serial

**NEP** VT0063

## 1. EQUIPMENT

Lower Vehicle Stowage Area Ventilation: Forward [LPD 17 CLASS ONLY].

## 2. MODEL / VERSION OF SYSTEM

General Exhaust Ventilation (GEV).

## 3. PURPOSE

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304. B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew. C. Determine the ability of the ship’s crew

## 4. REFERENCES

(a) Ship’s Heating, Ventilation & Air Conditioning (HVAC) drawings.
(b) Ship-specific HVAC Design Criteria Manual. (c) Ship’s Heating, Ventilation & Air Conditioning (HVAC) drawings. (d) NAVSEA “HVAC Design Criteria Manual” (LPD 17 Only), Design Criteria NSTM, SHIPS DRAWINGS

## 5. SUBSYSTEM

Exhaust ventilation terminals/ducts.

## 6. INSPECTORS REQUIREMENTS

Basic understanding of heating, ventilation & air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.

## 7. UNDERWAY

This system is part of INSURV Event No. VT0060. This entire event will require one to two days to complete.

## 8 DESCRIPTION OF INSPECTION

Ensure all supply and exhaust ventilation systems for the space are operating. If the ventilation fans have two speeds, then take air velocity measurements at both speeds. Close all access doors/hatches/scuttles to the space before taking air velocity measurements. Design exhaust air volumes (in CFM) for each space. This information can be found on a ship’s Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship’s Information Book.

## 9. PREREQUISITES

A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term

## 10. INSPECTION PROCEDURES

Ensure all supply and exhaust ventilation systems for the space are operating. Close all access doors/hatches/scuttles to the space before taking air velocity measurements. Design exhaust air volumes (in CFM) for each space. This information can be found on a ship’s Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship’s Information Book.

## 11. APPLICABLE INSPECTION PROCEDURES

A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term

## 12. LOGISTICS / FUNDING

UNCLAS

## 13. SECURITY CLEAR

UNCLAS

## 14. SUPPORT SERVICES

Shoulder bag, flashlight, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees), thermal (i.e., heated wire/element) anemometer

## 15. SHIP CLASSES

LPD 17

## 16. CHECKLIST ITEMS

102 (c) There were two supply ventilation systems and two exhaust ventilation systems installed and both were operational. [LPD 17 and Follow]

## 17. ADDITIONAL INSTRUCTIONS

References:
(a) NAVSEA "HVAC Design Criteria Manual" (LPD 17 Only), Design Criteria No. 70.
(b) NAVSEA "HVAC Design Criteria Manual" (LPD 18 Only), Design Criteria No. 70.
(c) NAVSEA "HVAC Design Criteria Manual" (LPD 19 thru 22), Design Criteria No. 70.

## 18. NOTES

SAT DEG UNSAT N/A
101 (b) Mechanical exhaust ventilation system fans provide a 2.75 minute rate of change (i.e., 21.8 air changes per hour). [LPD 17 and Follow]

References:
(a) NAVSEA "HVAC Design Criteria Manual" (LPD 17 Only), Design Criteria No. 70.
(b) NAVSEA "HVAC Design Criteria Manual" (LPD 18 Only), Design Criteria No. 70.
(c) NAVSEA "HVAC Design Criteria Manual" (LPD 19 thru 22), Design Criteria No. 70.

100. (a) Mechanical supply ventilation system fans provide a 2.75 minute rate of change (i.e., 21.8 air changes per hour). [LPD 17 and Follow]

References:
(a) NAVSEA "HVAC Design Criteria Manual" (LPD 17 Only), Design Criteria No. 70.
(b) NAVSEA "HVAC Design Criteria Manual" (LPD 18 Only), Design Criteria No. 70.
(c) NAVSEA "HVAC Design Criteria Manual" (LPD 19 thru 22), Design Criteria No. 70.
# Chapter 1 Checklist Report by Serial

**NEP** VT0064

## 1. EQUIPMENT

Well Deck, Main Vehicle Stowage Area, & Upper Vehicle Stowage Area Ventilation: Vehicle Emission Exhaust [LPD 17 CLASS ONLY].

## 2. MODEL / VERSION OF SYSTEM

Local Exhaust Ventilation (LEV).

## 3. PURPOSE

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304.  
B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew.  
C. Determine the ability of the ship’s crew

## 4. REFERENCES

(a) Ship's Heating, Ventilation & Air Conditioning (HVAC) drawings.  
(b) Ship-specific HVAC Design Criteria Manual.  
(c) Ship's Heating, Ventilation & Air Conditioning (HVAC) drawings.  
(d) NAVSEA "HVAC Design Criteria Manual" (LPD 17 Only), Design Criteria NSTM, SHIPS DRAWINGS

## 5. SUBSYSTEM

Exhaust ventilation terminals/ducts.

## 6. INSPECTORS REQUIREMENTS

Basic understanding of heating, ventilation & air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.

## 7. UNDERWAY

This system is part of INSURV Event No. VT0060. This entire event will require one to two days to complete.

## 8 DESCRIPTION OF INSPECTION

Ensure all supply and exhaust ventilation systems for the space are operating. If the ventilation fans have two speeds, then take air velocity measurements at both speeds. Close all access doors/hatches/scuttles to the space before taking air velocity measurements. Design exhaust air volumes (in CFM) for each terminal/duct. This information can be found on a ship's Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship's Information Book.

## 9. PREREQUISITES

Design exhaust air volumes (in CFM) for each terminal/duct. This information can be found on a ship's Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship's Information Book.

## 10. APPLICABLE INSPECTION PROCEDURES

A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term.肩吹袋 UNDERWAY

## 11. SUPPORT SERVICES

Shoulder bag, flashlight, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with articulated wand (i.e., bendable up to 90 degrees), thermal (i.e., heated) wire/element) anemometer with LPD 17.

## 12. LOGISTICS / FUNDING

A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term.

## 13. SECURITY CLEAR

UNCLAS

## 14. SHIP CLASSES

LPD 17

## 15. SHIP CLASSES

LPD 17

## 16. CHECKLIST ITEMS

### 105 (f) Label plates.

Label plates were provided to instruct that the damper shall be open when the flexible duct is connected, and closed when the flexible duct is disconnected. [LPD 17 and Follow]

### References:

(a) NAVSEA "HVAC Design Criteria Manual" (LPD 17 Only), Design Criteria No. 70.  
(b) NAVSEA "HVAC Design Criteria Manual" (LPD 18 Only), Design Criteria No. 70.  
(c) NAVSEA "HVAC Design Criteria Manual" (LPD 19 thru 22), Design Criteria No. 70.
104 (e) Vacuum breakers. A vacuum breaker was installed in the system main ducting just upstream of the fan. The vacuum breaker was designed so that an air flow of no less than 1,059 cfm (500 L/s) passes through the fan when the fan is operating. [LPD 1]

References:
(a) NAVSEA "HVAC Design Criteria Manual" (LPD 17 Only), Design Criteria No. 70.
(b) NAVSEA "HVAC Design Criteria Manual" (LPD 18 Only), Design Criteria No. 70.
(c) NAVSEA "HVAC Design Criteria Manual" (LPD 19 thru 22), Design Criteria No. 70.

103 (d) Shut-off Dampers. Each duct stub provided for flexible duct connections was fitted with a shut-off damper. [LPD 17 and Follow]

References:
(a) NAVSEA "HVAC Design Criteria Manual" (LPD 17 Only), Design Criteria No. 70.
(b) NAVSEA "HVAC Design Criteria Manual" (LPD 18 Only), Design Criteria No. 70.
(c) NAVSEA "HVAC Design Criteria Manual" (LPD 19 thru 22), Design Criteria No. 70.

102 (c) Flexible duct connections. Sufficient flexible duct connection stubs were provided and located so that all vehicles were within range of at least one such stub. [LPD 17 and Follow]

References:
(a) NAVSEA "HVAC Design Criteria Manual" (LPD 17 Only), Design Criteria No. 70.
(b) NAVSEA "HVAC Design Criteria Manual" (LPD 18 Only), Design Criteria No. 70.
(c) NAVSEA "HVAC Design Criteria Manual" (LPD 19 thru 22), Design Criteria No. 70.

101 (b) Mechanical exhaust had measured airflow of 2,013 cfm (950 L/s) for each Vehicle Area, port side. [LPD 17 and Follow]

References:
(a) NAVSEA "HVAC Design Criteria Manual" (LPD 17 Only), Design Criteria No. 70.
(b) NAVSEA "HVAC Design Criteria Manual" (LPD 18 Only), Design Criteria No. 70.
(c) NAVSEA "HVAC Design Criteria Manual" (LPD 19 thru 22), Design Criteria No. 70.

100. (a) Mechanical exhaust had measured airflow of 2,013 cfm (950 L/s) for each Vehicle Area, starboard side. [LPD 17 and Follow]

References:
(a) NAVSEA "HVAC Design Criteria Manual" (LPD 17 Only), Design Criteria No. 70.
(b) NAVSEA "HVAC Design Criteria Manual" (LPD 18 Only), Design Criteria No. 70.
(c) NAVSEA "HVAC Design Criteria Manual" (LPD 19 thru 22), Design Criteria No. 70.
# Chapter 1 Checklist Report by Serial

**NEP**

**VT0065**

## 1. EQUIPMENT

Well Deck, Main Vehicle Stowage Area, & Upper Vehicle Stowage Area Ventilation: LCAC Operations [LPD 17 CLASS ONLY].

## 2. MODEL / VERSION OF SYSTEM

General Exhaust Ventilation (GEV).

## 3. PURPOSE

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304.  
B. To implement process-focused inspection when feasible to strengthen the capability of the ship's crew.  
C. Determine the ability of the ship's crew

## 4. REFERENCES

(a) Ship's Heating, Ventilation & Air Conditioning (HVAC) drawings.  
(b) Ship-specific HVAC Design Criteria Manual.  
(c) Ship's Heating, Ventilation & Air Conditioning (HVAC) drawings.  
(d) NAVSEA "HVAC Design Criteria Manual" (LPD 17 Only), Design Criteria NSTM, SHIPS DRAWINGS

## 5. SUBSYSTEM

Exhaust ventilation terminals/ducts.

## 6. INSPECTORS REQUIREMENTS

Basic understanding of heating, ventilation & air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.

## 7. UNDERWAY

This system is part of INSURV Event No. VT0060. This entire event will require one to two days to complete.

## 8. DESCRIPTION OF INSPECTION

Ensure all supply and exhaust ventilation systems for the space are operating. If the ventilation fans have two speeds, then take air velocity measurements at both speeds. Close all access doors/hatches/scuttles to the space before taking air velocity measurements.  

Design exhaust air volumes (in CFM) for each space. This information can be found on a ship's Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship's Information Book.

## 9. PREREQUISITES

A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term

## 10. APPLICABLE INSPECTION PROCEDURES

A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term

## 11. SUPPORT SERVICES

Shoulder bag, flashlight, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees), thermal (i.e., heated wire/element) anemometer with.

## 12. LOGISTICS / FUNDING

LPD 17

## 13. SECURITY CLEAR

UNCLAS

## 14. ADDITIONAL INSTRUCTIONS

- Shoulder bag, flashlight, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees), thermal (i.e., heated wire/element) anemometer with.

## 15. SHIP CLASSES

- LPD 17

## 16. CHECKLIST ITEMS

100. (a) Two mechanical supply ventilation systems, one port side and one starboard side, each had measured airflow of 169,983 cfm (80,223 L/s).  

**References:**

(a) NAVSEA "HVAC Design Criteria Manual" (LPD 17 Only), Design Criteria No. 70.  
(b) NAVSEA "HVAC Design Criteria Manual" (LPD 18 Only), Design Criteria No. 70.  
(c) NAVSEA "HVAC Design Criteria Manual" (LPD 19 thru 22), Design Criteria No. 70.
# Chapter 1 Checklist Report by Serial

**NEP VT0066**

## 1. EQUIPMENT

Vehicle Stowage Area Ventilation: Carbon Monoxide Detectors [LPD 17 CLASS ONLY].

## 2. MODEL / VERSION OF SYSTEM

General Exhaust Ventilation (GEV).

## 3. PURPOSE

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304.  
B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew.  
C. Determine the ability of the ship’s crew

## 4. REFERENCES

(a) Ship’s Heating, Ventilation & Air Conditioning (HVAC) drawings.  
(b) Ship-specific HVAC Design Criteria Manual.  
(c) Ship’s Heating, Ventilation & Air Conditioning (HVAC) drawings.  
(d) NAVSEA "HVAC Design Criteria Manual" (LPD 17 Only), Design Criteria

## 5. SUBSYSTEM

Carbon monoxide detectors.

## 6. INSPECTORS REQUIREMENTS

Basic understanding of heating, ventilation & air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.

## 7. UNDERWAY

This system is part of INSURV Event No. VT0060. This entire event will require one to two days to complete.

## 8. DESCRIPTION OF INSPECTION

TBD.

## 9. PREREQUISITES

Design exhaust air volumes (in CFM) for each space. This information can be found on a ship’s Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship’s Information Book.

## 10. APPLICABLE INSPECTION PROCEDURES

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304.  
B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew.  
C. Determine the ability of the ship’s crew

## 11. SUPPORT SERVICES

Shoulder bag, flashlight, telescoping inspection mirror, hearing protection.

## 12. LOGISTICS / FUNDING

If carbon monoxide detectors are inoperative, or not installed, it is a Priority 1 Safety deficiency with a maximum EOC score of 0.2. For Trials, if it was below 90% of design, if carbon monoxide detectors are inoperative, or not installed, it is a Star

## 13. SECURITY CLEAR

UNCLAS

## 14. CHECKLIST ITEMS

100. (a) Carbon monoxide detectors were installed in all vehicle areas. [LPD 17, 19 thru 22]

## 15. ADDITIONAL INSTRUCTIONS

References:

(a) NAVSEA "HVAC Design Criteria Manual" (LPD 17 Only), Design Criteria No. 70.  
(b) NAVSEA "HVAC Design Criteria Manual" (LPD 19 thru 22), Design Criteria No. 70.  
(c) NAVSEA S9AA0-AB-GOS-010/GSO "General Specifications for Overhaul of Surface
# Chapter 1 Checklist Report by Serial

## 1. EQUIPMENT

Well Deck, Main Vehicle Stowage Area, & Upper Vehicle Stowage Area Ventilation: Non-LCAC Operations [LPD 17 CLASS ONLY].

## 2. MODEL / VERSION OF SYSTEM

General Exhaust Ventilation (GEV).

## 3. PURPOSE

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304.  
B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew.  
C. Determine the ability of the ship’s crew

## 4. REFERENCES

(a) Ship's Heating, Ventilation & Air Conditioning (HVAC) drawings.  
(b) Ship-specific HVAC Design Criteria Manual.  
(c) Ship's Heating, Ventilation & Air Conditioning (HVAC) drawings.  
(d) NAVSEA "HVAC Design Criteria Manual" (LPD 17 Only), Design Criteria

## 5. SUBSYSTEM

Exhaust ventilation terminals/ducts.

## 6. INSPECTORS REQUIREMENTS

Basic understanding of heating, ventilation & air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.

## 8. DESCRIPTION OF INSPECTION

Ensure all supply and exhaust ventilation systems for the space are operating. If the ventilation fans have two speeds, then take air velocity measurements at both speeds. Close all access doors/hatches/scuttles to the space before taking air velocity measurements.

## 9. PREREQUISITES

Design exhaust air volumes (in CFM) for each space. This information can be found on a ship's Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship's Information Book.

## 11. APPLICABLE INSPECTION PROCEDURES

A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term

## 12. LOGISTICS / FUNDING

A shoulder bag, flashlight, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees), thermal (i.e., heated wire/element) anemometer with

## 13. SECURITY CLEAR

This system is part of INSURV Event No. VT0060. This entire event will require one to two days to complete.

## 14. SUPPORT SERVICES

LPD 17

## 16. CHECKLIST ITEMS

### 103 (d) Label Plates.

Label plates were provided in the aft mooring stations to instruct that during mooring operations, the Well Deck exhaust fans in Fan Rooms 2-189-1 or 2-189-2 may be shutdown while Mooring Station 5 or 6 is manned, respectively. Aft

## 17. ADDITIONAL INSTRUCTIONS

References:  
(a) NAVSEA "HVAC Design Criteria Manual" (LPD 17 Only), Design Criteria No. 70.  
(b) NAVSEA "HVAC Design Criteria Manual" (LPD 18 Only), Design Criteria No. 70.  
(c) NAVSEA "HVAC Design Criteria Manual" (LPD 19 thru 22), Design Criteria No. 70.
102 (c) Mechanical exhaust ventilation system were located aft and had measured airflow of 159,975 cfm (75,500 L/s); half of the total airflow was provided from the port side and half from the starboard side. [LPD 19 thru 22]

101 (b) Mechanical exhaust ventilation system were located aft and had measured airflow of 137,727 cfm (65,000 L/s); half of the total airflow was provided from the port side and half from the starboard side. [LPD 17, 18, 23 and Follow]

100. (a) Mechanical supply ventilation system were located forward and had measured airflow of 180,105 cfm (85,000 L/s); half of the total airflow was provided from the port side and half from the starboard side. [LPD 17 and Follow]

References:
(a) NAVSEA "HVAC Design Criteria Manual" (LPD 19 thru 22), Design Criteria No. 70.

NOTE: The Well, Main Vehicle Stowage Area, and Upper Vehicle Stowage Areas are ventilated as one space. The difference of 20,130 cfm (9,500 L/s) shall be natu

References:
(a) NAVSEA "HVAC Design Criteria Manual" (LPD 17 Only), Design Criteria No. 70.
(b) NAVSEA "HVAC Design Criteria Manual" (LPD 18 Only), Design Criteria No. 70.
(c) NAVSEA "HVAC Design Criteria Manual" (LPD 23 and Follow), Design Criteria No. 7

References:
(a) NAVSEA "HVAC Design Criteria Manual" (LPD 17 Only), Design Criteria No. 70.
(b) NAVSEA "HVAC Design Criteria Manual" (LPD 18 Only), Design Criteria No. 70.
(c) NAVSEA "HVAC Design Criteria Manual" (LPD 19 thru 22), Design Criteria No. 70.
### Chapter 1 Checklist Report by Serial

**NEP** VT0400

#### 1. EQUIPMENT

#### 2. MODEL / VERSION OF SYSTEM
General Exhaust Ventilation (GEV).

#### 3. PURPOSE
A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304. B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew. C. Determine the ability of the ship’s crew.

#### 4. REFERENCES
(a) Ship's Heating, Ventilation & Air Conditioning (HVAC) drawings. 
(b) Ship-specific HVAC Design Criteria Manual. 
(c) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, p. 18-12 (DDG 51 Class only). 
(d) LHD Ship Specification, Addendum 2, HVAC Design.

#### 5. SUBSYSTEM
Exhaust ventilation terminals/ducts.

#### 6. INSPECTORS REQUIREMENTS
Basic understanding of heating, ventilation & air conditioning (HVAC) systems, proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.

#### 7. UNDERWAY
This system is part of OH ventilation under INSURV Event No. VT0040. All of OH ventilation will require two days to complete.

#### 8 DESCRIPTION OF INSPECTION
Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure.

#### 9. PREREQUISITES
Design exhaust air volumes (in CFM) and/or design exhaust air rates of change for each space or hood. This information can be found on a ship’s Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship’s Information System.

#### 10. APPLICABLE INSPECTION PROCEDURES
A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term.

#### 11. SUPPORT SERVICES
Shoulder bag, flashlight, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees), thermal (i.e., heated wire/element) anemometer with

#### 12. LOGISTICS / FUNDING
A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term.

#### 13. SECURITY CLEAR
UNCLAS

#### 14. SHIP CLASSES
ALL

#### 15. SHIP CLASSES

#### 16. CHECKLIST ITEMS
106 (g) Exhaust terminal was located in the overhead.

#### 17. ADDITIONAL INSTRUCTIONS
References:
(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual for Surface Ships, Criteria Sheet 3F.

NOTE: An approved Departure from Specifications (DFS) is re

Thursday, June 06, 2013
105 (f) Exhaust terminal was located no more than nine inches above the deck.

References: (a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual for Surface Ships, Criteria Sheet 3F.
(b) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, p. 18-12 (DDG 51 Class only).
(c) LHD Ship Specification, Addendum 2, HVAC Design Criteria Manual.

104 (e) 1/3 (30 percent for LHD Class) of exhaust quantity was from terminals located nine inches above the deck and near the plant machinery.

References: (a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual for Surface Ships, Criteria Sheet 3F.

NOTE: An approved Departure from Specification (DFS) is required.

103 (d) Mechanical supply ventilation system provided one air change every six minutes in the air conditioning / refrigeration machinery room.

References: (a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual for Surface Ships, Criteria Sheet 3F.

102 (c) Mechanical exhaust ventilation system provided at least one air change every 15 minutes (i.e., four air changes per hour) in the air conditioning / refrigeration machinery room. [DDG 51 CLASS ONLY]

References: (a) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, p. 18-12 (DDG 51 Class only).

101 (b) Mechanical supply ventilation system provided one air change every 10 minutes (i.e., six air changes per hour) in the refrigeration machinery room. [LHD CLASS ONLY]


100. (a) Mechanical ventilation system had measured airflow per design criteria.

References: (a) Ship's Heating, Ventilation & Air Conditioning (HVAC) drawings.
(b) Ship-specific HVAC Design Criteria Manual.
(c) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, p. 18-12 (DDG 51 Class only).
(d) LHD Ship Specification, Addendum
## Chapter 1 Checklist Report by Serial

### 1. EQUIPMENT


### 2. MODEL / VERSION OF SYSTEM

General Exhaust Ventilation (GEV).

### 3. PURPOSE

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, S 7304. B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew. C. Determine the ability of the ship’s crew

### 4. REFERENCES


### 5. SUBSYSTEM

Exhaust ventilation terminals/ducts and flexible exhaust hood.

### 6. INSPECTORS REQUIREMENTS

Basic understanding of heating, ventilation & air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.

### 7. UNDERWAY

This system is part of OH ventilation under INSURV Event No. VT0040. All of OH ventilation will require two days to complete.

### 8 DESCRIPTION OF INSPECTION

Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure.

### 9. PREREQUISITES

Design exhaust air volumes (in CFM) for each space or hood. This information can be found on a ship’s Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship’s Information Book.

### 10. APPLICABLE INSPECTION PROCEDURES

Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure.

### 11. SUPPORT SERVICES

Shoulder bag, flashlight rated as intrinsically safe for hazardous locations, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees)

### 12. LOGISTICS / FUNDING

A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term

### 13. SECURITY CLEAR

UNCLAS CLEAR

### 14. SHIP CLASSES

ALL

### 15. CHECKLIST ITEMS

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Reference(s)</th>
<th>SAT</th>
<th>DEG</th>
<th>UNSAT</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>(b) Compartment was under negative air pressure (-0.25 inches of water pressure).</td>
<td>References: (a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 4B (Section 3.2). (b) LHD Ship Specification, Addendum 2, HVAC Design Criteria Manual, Criteria Sheet 21. NOTE: For purposes of an INSURV inspection, pressure different</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>100</td>
<td>(a) Compartment was provided with an overboard exhaust rated for a minimum of 300 CFM.</td>
<td>References: (a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 4B (Section 3.2). (b) LHD Ship Specification, Addendum 2, HVAC Design Criteria Manual, Criteria Sheet 21.</td>
<td>☐</td>
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Thursday, June 06, 2013
### Chapter 1 Checklist Report by Serial

**NEP** VT0402

#### 1. EQUIPMENT
Occupational Health Ventilation Systems: Battery Charging and Storage Area.

#### 2. MODEL / VERSION OF SYSTEM
General Exhaust Ventilation (GEV).

#### 3. PURPOSE
A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304.  B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew.  C. Determine the ability of the ship’s crew

#### 4. REFERENCES

#### 5. SUBSYSTEM
Exhaust ventilation terminals/ducts.

#### 6. INSPECTORS REQUIREMENTS
Basic understanding of heating, ventilation & air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.

#### 7. UNDERWAY
This system is part of OH ventilation under INSURV Event No. VT0040. All of OH ventilation will require two days to complete.

#### 8 DESCRIPTION OF INSPECTION
**NOTE:** The hazard is the production of hydrogen gas during battery charging. Gel-type lead acid batteries that are valve-regulated lead acid (VRLA) are maintenance-free and require no ventilation; however, areas where batteries are stored vice in a charge.

Design exhaust air volumes (in CFM) and/or design exhaust air rates of change for each space or hood. This information can be found on a ship’s Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship’s Information.

#### 9. PREREQUISITES
A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term.

#### 10. APPLICABLE INSPECTION PROCEDURES

#### 11. LOGISTICS / FUNDING

#### 12. SECURITY CLEAR
UNCLAS

#### 13. SUPPORT SERVICES
Shoulder bag, flashlight rated as intrinsically safe for hazardous locations, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees)

#### 14. SHIP CLASSES
ALL

#### 15. CHECKLIST ITEMS

108 (i) There was at least one exhaust terminal located over the charging racks in the Aviation Alkaline Battery Shop. Minimum air flow for each terminal was 75 CFM.  [LHD CLASS]

107 (h) Exhaust ventilation flow was from alkaline to acid type batteries, if both types were stored in the compartment.

**References:**
- NOTE: An approved Departure from Specification (DFS) is required for ships not having an exhaust terminal located over the charging racks in the Aviation

108 (i) There was at least one exhaust terminal located over the charging racks in the Aviation Alkaline Battery Shop. Minimum air flow for each terminal was 75 CFM.  [LHD CLASS]

107 (h) Exhaust ventilation flow was from alkaline to acid type batteries, if both types were stored in the compartment.

**References:**
106 (g) Mechanical exhaust ventilation provided one air change every 10 minutes (i.e., six air changes per hour) in the Lithium Battery Shop when the mechanical damper was partially closed (the rate of change is two minutes when the damper was fully open).

References: (a) LPD-17 Ship Specifications, Addendum 2, HVAC Design Criteria Manual, Criteria Sheet 92.

105 (f) Mechanical exhaust ventilation provided one air change every six minutes (i.e., 10 air changes per hour) in the Forklift Truck Battery Charging Station. [LPD CLASS]

References: (a) LPD-17 Ship Specifications, Addendum 2, HVAC Design Criteria Manual, Criteria Sheet 15.

104 (e) Mechanical exhaust ventilation provided one air change every six minutes (i.e., 10 air changes per hour) in the Pallet Truck Stowage / Charging Station (compartment was not in the CPS envelope). [DDG CLASS]

References: (a) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, p. 18-55 (DDG 51 Class).

103 (d) Mechanical exhaust ventilation provided one air change every six minutes (i.e., 10 air changes per hour) in the Storage Battery Shop (non-gel type lead acid batteries).


102 (c) Mechanical exhaust ventilation provided one air change every six minutes (i.e., 10 air changes per hour) in spaces containing battery charging racks.

References: (a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 3L.

101 (b) Mechanical exhaust ventilation provided one air change every 10 minutes (i.e., six air changes per hour) in the battery storage area (batteries are not being charged).


100. (a) Mechanical ventilation system had measured airflow per design criteria.

### Chapter 1 Checklist Report by Serial

**NEP VT0403**

#### 1. EQUIPMENT


#### 2. MODEL / VERSION OF SYSTEM

General Exhaust Ventilation (GEV).

#### 3. PURPOSE

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304.  
B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew.  
C. Determine the ability of the ship’s crew

#### 4. REFERENCES

(a) Ship’s Heating, Ventilation & Air Conditioning (HVAC) drawings.
(b) Ship-specific HVAC Design Criteria Manual.
(c) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 3H.
(d) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, p

#### 5. SUBSYSTEM

Exhaust ventilation terminals/ducts.

#### 6. INSPECTORS REQUIREMENTS

Basic understanding of heating, ventilation & air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.

#### 7. UNDERWAY

This system is part of OH ventilation under INSURV Event No. VT0040. All of OH ventilation will require two days to complete.

#### 8 DESCRIPTION OF INSPECTION

Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure

Design exhaust air volumes (in CFM) for each space or hood. This information can be found on a ship's Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship’s Information Book.

#### 9. PREREQUISITES

A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term

#### 10. SUPPORT SERVICES

Shoulder bag, flashlight rated as intrinsically safe for hazardous locations, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees)

#### 11. APPLICABLE INSPECTION PROCEDURES

A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term

#### 12. LOGISTICS / FUNDING

UNCLAS

#### 13. SECURITY CLEAR

UNCLAS CLEAR

#### 14. SHIP CLASSES

ALL

#### 15. SHIP CLASSES

ALL

#### 16. CHECKLIST ITEMS

110 (k) A supply terminal was installed in the overhead.

109 (j) An exhaust terminal was installed in the overhead.

#### 17. ADDITIONAL INSTRUCTIONS

References:
(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 3H.

NOTE: An approved Departure from Specification (DFS) is required for ships not having an supply terminal located in the overhead.

(b) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, pp. 18-10 & 18-10A (DDG 51 Class).

(c) LPD-17 Ship Specification, Addendum 2, HVAC Design Criteria Manual.
108 (i) Terminals nine inches off the deck exhaust 2/3 of the compartment air quantity in the vicinity of pumps and comminutors and 1/3 of the compartment air quantity was exhausted from the overhead.

References:
(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 3H.
(b) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, pp. 18-10 & 18-10A (DDG 51 Class).

NOTE: An approved Departure from Specification (DFS) is required for

107 (h) Exhaust terminals were no more than nine inches above the deck.

References:
(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 3H.
(b) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, pp. 18-10 & 18-10A (DDG 51 Class).

106 (g) Exhaust terminal screens were fitted with a quick disconnect from the vent terminal and secured by a 1/16-inch diameter, 7- by 7-wire rope lanyard of compatible material, at least seven inches in length.

References:
(a) GSO 2004, Section 512e.

105 (f) Exhaust terminal had 1-1/2 inch mesh (0.120 inch diameter wire) screens. For openings nine inches in diameter or less, or where the small dimension of a rectangular opening is nine inches or less, 1/2 inch mesh (0.063 inch diameter wire for inter

References:
(a) GSO 2004, Section 512e.
(b) NSTM 510, 510-7.1.9.

NOTE: Expanded metal, perforated metal, and other non-wire mesh screens are not authorized.

104 (e) Exhaust terminals were installed in the vicinity of the sewage pumps and/or comminutors (at least one).

References:
(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 3H.
(b) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, pp. 18-10 & 18-10A (DDG 51 Class).
(c) LHD Ship Specification, Addendum 2, HVAC Design Criteria Manual.

103 (d) Supply terminals had eight-mesh (0.035 inch diameter wire) screens.

References:
(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 3H.
(b) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, pp. 18-10 & 18-10A (DDG 51 Class).
(c) NSTM 510, 510-7.1.9.

102 (c) Minimum negative air pressure (-0.25 inches of water pressure) was maintained when access doors were closed.

References:
(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 3H.
(b) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, pp. 18-10 & 18-10A (DDG 51 Class).
(c) LHD Ship Specification, Addendum 2, HVAC Design Criteria Manual.

101 (b) Mechanical exhaust ventilation system provided one air change every six minutes (i.e., 10 air changes per hour).

References:
(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 3H.
(b) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, pp. 18-10 & 18-10A (DDG 51 Class).
(c) LHD Ship Specification, Addendum 2, HVAC Design Criteria Manual.

100. (a) Mechanical ventilation system had measured airflow per design criteria.

References:
(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 3H.
(b) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, pp. 18-10 & 18-10A (DDG 51 Class).
(c) LHD Ship Specification, Addendum 2, HVAC Design Criteria Manual.
### Chapter 1 Checklist Report by Serial

#### NEP VT0404

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<thead>
<tr>
<th>1. EQUIPMENT</th>
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<table>
<thead>
<tr>
<th>2. MODEL / VERSION OF SYSTEM</th>
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</thead>
<tbody>
<tr>
<td>General Exhaust Ventilation (GEV).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. PURPOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304. B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew. C. Determine the ability of the ship’s crew</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>4. REFERENCES</th>
</tr>
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<table>
<thead>
<tr>
<th>5. SUBSYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhaust ventilation terminals/ducts (and supply ventilation terminals/ducts for compartments with blowout air systems).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. INSPECTORS REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic understanding of heating, ventilation &amp; air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>7. UNDERWAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>This system is part of OH ventilation under INSURV Event No. VT0040. All of OH ventilation will require two days to complete.</td>
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<table>
<thead>
<tr>
<th>8 DESCRIPTION OF INSPECTION</th>
</tr>
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<tbody>
<tr>
<td>Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure</td>
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<table>
<thead>
<tr>
<th>9. PREREQUISITES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design exhaust air volumes (in CFM) and/or design exhaust air rates of change for each space or hood. This information can be found on a ship’s Heating, Ventilation &amp; Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship’s Information Book.</td>
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<table>
<thead>
<tr>
<th>10. APPLICABLE INSPECTION PROCEDURES</th>
</tr>
</thead>
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<tr>
<td>A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term</td>
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<tr>
<th>11. LOGISTICS / FUNDING</th>
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<th>12. SECURITY CLEAR</th>
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<tr>
<th>13. SUPPORT SERVICES</th>
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<td>NONE</td>
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<tr>
<th>14. SHIP CLASSES</th>
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<tr>
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<table>
<thead>
<tr>
<th>15. CHECKLIST ITEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>101 (b) Mechanical supply (i.e., blowout) ventilation system provided at least one air change every four minutes (i.e., 15 air changes per hour).</td>
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<table>
<thead>
<tr>
<th>16. ADDITIONAL INSTRUCTIONS</th>
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</thead>
</table>

<table>
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<tr>
<th>17. NOTES</th>
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</thead>
<tbody>
<tr>
<td>SAT DEG UNSAT N/A</td>
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</tbody>
</table>

Wednesday, June 05, 2013
100. (a) Mechanical ventilation system had measured airflow per design criteria.

References:
(a) Ship's Heating, Ventilation & Air Conditioning (HVAC) drawings.
(b) Ship-specific HVAC Design Criteria Manual.
(c) Ship's Information Book.
(d) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual for Surface Ships, Criteria Sheet 13G.
Chapter 1 Checklist Report by Serial

NEP VT0405

1. EQUIPMENT

2. MODEL / VERSION OF SYSTEM
General Exhaust Ventilation (GEV).

3. PURPOSE
A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304. B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew. C. Determine the ability of the ship’s crew

4. REFERENCES

5. SUBSYSTEM
Exhaust ventilation terminals/ducts.

6. INPECTORS REQUIREMENTS
Basic understanding of heating, ventilation & air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.

7. UNDERWAY
This system is part of OH ventilation under INSURV Event No. VT0040. All of OH ventilation will require two days to complete.

8 DESCRIPTION OF INSPECTION
Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure

9. PREREQUISITES
Design exhaust air volumes (in CFM) for each space or hood. This information can be found on a ship’s Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship’s Information Book.

10. APPLICABLE INSPECTION PROCEDURES

11. APPLICABLE INSPECTION PROCEDURES

12. LOGISTICS / FUNDING
A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term

13. SECURITY CLEAR

14. SUPPORT SERVICES
Shoulder bag, flashlight rated as intrinsically safe for hazardous locations, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees)

15. SHIP CLASSES
ALL

16. CHECKLIST ITEMS
107 (h) An exhaust terminal was installed in the overhead.

106 (g) Exhaust terminals were no more than nine inches above the deck.
105 (f) Exhaust terminal screens were fitted with a quick disconnect from the vent terminal and secured by a 1/16-inch diameter, 7- by 7- wire rope lanyard of compatible material, at least 7 inches in length.

References: (a) GSO 2004, Section 512e.

104 (e) Exhaust terminal had 1-1/2 inch mesh (0.120 inch diameter wire) screens. For openings nine inches in diameter or less, or where the small dimension of a rectangular opening is nine inches or less, 1/2 inch mesh (0.063 inch diameter wire for inter

References: (a) GSO 2004, Section 512e. (b) NSTM 510, 510-7.1.9. NOTE: Expanded metal, perforated metal, and other non-wire mesh screens are not authorized.

103 (d) Supply terminals had eight-mesh (0.035 inch diameter wire) screens.


102 (c) Minimum negative air pressure (-0.25 inches of water pressure) was maintained when access doors were closed.


101 (b) Mechanical exhaust ventilation system provided one air change every four minutes (i.e., 15 air changes per hour).


100. (a) Mechanical ventilation system had measured airflow per design criteria.

### Chapter 1 Checklist Report by Serial

#### NEP VT0406

<table>
<thead>
<tr>
<th>1. EQUIPMENT</th>
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</table>

#### 2. MODEL / VERSION OF SYSTEM

General Exhaust Ventilation (GEV).

#### 3. PURPOSE

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304.  
B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew.  
C. Determine the ability of the ship’s crew

#### 4. REFERENCES

(a) Ship’s Heating, Ventilation & Air Conditioning (HVAC) drawings.  
(b) Ship-specific HVAC Design Criteria Manual.  
(c) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 13A.  
(d) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual,

#### 5. SUBSYSTEM

Exhaust ventilation terminals/ducts.

#### 6. INSPECTORS REQUIREMENTS

- Basic understanding of heating, ventilation & air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.

#### 7. UNDERWAY

This system is part of OH ventilation under INSURV Event No. VT0040. All of OH ventilation will require two days to complete.

#### 8 DESCRIPTION OF INSPECTION

Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure:

- Design exhaust air volumes (in CFM) for each space or hood. This information can be found on a ship’s Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship’s Information Book.

#### 9. PREREQUISITES

A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term

#### 10. APPLICABLE INSPECTION PROCEDURES

- Shoulder bag, flashlight rated as intrinsically safe for hazardous locations, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees)

#### 11. SUPPORT SERVICES

- A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term

#### 12. LOGISTICS / FUNDING

- UNCLAS CLEAR

#### 13. SECURITY CLEAR

- ALL

#### 14. SHIP CLASSES

- UNCLAS CLEAR

#### 15. ADDITIONAL INSTRUCTIONS

- SAT DEG UNSAT N/A

#### 16. CHECKLIST ITEMS

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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<tbody>
<tr>
<td>107 (h)</td>
<td>An exhaust terminal was installed in the overhead.</td>
</tr>
<tr>
<td>106 (g)</td>
<td>Exhaust terminals were no more than nine inches above the deck.</td>
</tr>
</tbody>
</table>

References:  
(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 13A.  
(b) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, pp. 18-65 & 18-65A (DDG 51 Class).  
(c) LHD Ship Specification, Addendum 2, HVAC Design Criteria Manual,
105 (f) Exhaust terminal screens were fitted with a quick disconnect from the vent terminal and secured by a 1/16-inch diameter, 7- by 7-wire rope lanyard of compatible material, at least 7 inches in length.

References: (a) GSO 2004, Section 512e.

104 (e) Exhaust terminal had 1-1/2 inch mesh (0.120 inch diameter wire) screens. For openings nine inches in diameter or less, or where the small dimension of a rectangular opening is nine inches or less, 1/2 inch mesh (0.063 inch diameter wire for inter

References: (a) GSO 2004, Section 512e. (b) NSTM 510, 510-7.1.9. NOTE: Expanded metal, perforated metal, and other non-wire mesh screens are not authorized.

103 (d) Supply terminals had eight-mesh (0.035 inch diameter wire) screens.


102 (c) Minimum negative air pressure (-0.25 inches of water pressure) was maintained when access doors were closed.


101 (b) Mechanical exhaust ventilation system provided one air change every four minutes (i.e., 15 air changes per hour).


100. (a) Mechanical ventilation system had measured airflow per design criteria.

# Chapter 1 Checklist Report by Serial

**NEP**  VT0407

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<thead>
<tr>
<th>1. EQUIPMENT</th>
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<table>
<thead>
<tr>
<th>2. MODEL / VERSION OF SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Exhaust Ventilation (GEV).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. PURPOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304. B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew. C. Determine the ability of the ship’s crew</td>
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<table>
<thead>
<tr>
<th>4. REFERENCES</th>
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</thead>
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<table>
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<tr>
<th>5. SUBSYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhaust ventilation terminals/ducts.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. INSPECTORS REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic understanding of heating, ventilation &amp; air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>7. UNDERWAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>This system is part of OH ventilation under INSURV Event No. VT0040. All of OH ventilation will require two days to complete.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8 DESCRIPTION OF INSPECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure</td>
</tr>
</tbody>
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<thead>
<tr>
<th>9. PREREQUISITES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design exhaust air volumes (in CFM) for each space or hood. This information can be found on a ship’s Heating, Ventilation &amp; Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship’s Information Book.</td>
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<table>
<thead>
<tr>
<th>10. APPLICABLE INSPECTION PROCEDURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term</td>
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<tr>
<th>11. SUPPORT SERVICES</th>
</tr>
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<tbody>
<tr>
<td>Shoulder bag, flashlight rated as intrinsically safe for hazardous locations, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12. LOGISTICS / FUNDING</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNCLAS CLEAR</td>
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<table>
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<tr>
<th>13. SECURITY CLEAR</th>
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<tbody>
<tr>
<td>UNCLAS</td>
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<table>
<thead>
<tr>
<th>14. SHIP CLASSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
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<table>
<thead>
<tr>
<th>15. SHIP CLASSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
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</table>

<table>
<thead>
<tr>
<th>16. CHECKLIST ITEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>104 (e) Exhaust terminals were no more than nine inches above the deck.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>17. ADDITIONAL INSTRUCTIONS</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>SAT</th>
<th>DEG</th>
<th>UNSAT</th>
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<tbody>
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</table>

<table>
<thead>
<tr>
<th>18. NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>103 (d) 2/3 of the exhaust air quantity came from the terminal nine inches above the deck and 1/3 from the overhead terminal. [DDG CLASS]</td>
</tr>
</tbody>
</table>

| References: (a) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, p. 18-67 (DDG 51 Class). NOTE: An approved Departure from Specification (DFS) is required for ships not having exhaust terminals located in the overhead and/or no more than nine inc |

<table>
<thead>
<tr>
<th>SAT</th>
<th>DEG</th>
<th>UNSAT</th>
<th>N/A</th>
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<tbody>
<tr>
<td></td>
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</tbody>
</table>
102 (c) Mechanical exhaust ventilation system provided at least one air change every four minutes (i.e., 15 air changes per hour). [LHD AND DDG 51 CLASS ONLY]

References:
(a) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, p. 18-67 (DDG 51 Class).

101 (b) Mechanical exhaust ventilation system provided at least one air change every eight minutes (i.e., 7.5 air changes per hour).

References:
(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 13H.

100. (a) Mechanical ventilation system had measured airflow per design criteria.

References:
(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 13H.
# Chapter 1 Checklist Report by Serial

**NEP** VT0408

<table>
<thead>
<tr>
<th>1. EQUIPMENT</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>2. MODEL / VERSION OF SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Exhaust Ventilation (GEV).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. PURPOSE</th>
</tr>
</thead>
</table>
| A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304.  
B. To implement process-focused inspection when feasible to strengthen the capability of the ship's crew.  
C. Determine the ability of the ship's crew |

<table>
<thead>
<tr>
<th>4. REFERENCES</th>
</tr>
</thead>
</table>
| (a) Ship's Heating, Ventilation & Air Conditioning (HVAC) drawings.  
(b) Ship-specific HVAC Design Criteria Manual.  
(c) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 13A.  
(d) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, |

<table>
<thead>
<tr>
<th>5. SUBSYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhaust ventilation terminals/ducts.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. INSPECTORS REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic understanding of heating, ventilation &amp; air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7. UNDERWAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>This system is part of OH ventilation under INSURV Event No. VT0040. All of OH ventilation will require two days to complete.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8 DESCRIPTION OF INSPECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9. PREREQUISITES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design exhaust air volumes (in CFM) for each space or hood. This information can be found on a ship's Heating, Ventilation &amp; Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship's Information Book.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10. APPLICABLE INSPECTION PROCEDURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>11. SUPPORT SERVICES</th>
</tr>
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<tbody>
<tr>
<td>Shoulder bag, flashlight rated as intrinsically safe for hazardous locations, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees)</td>
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</table>

<table>
<thead>
<tr>
<th>12. LOGISTICS / FUNDING</th>
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</thead>
<tbody>
<tr>
<td>A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term</td>
</tr>
</tbody>
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<tr>
<th>13. SECURITY CLEAR</th>
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<th>14. SHIP CLASSES</th>
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<tr>
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</table>

<table>
<thead>
<tr>
<th>16. CHECKLIST ITEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>108 (i) An exhaust terminal was installed in the overhead.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>17. ADDITIONAL INSTRUCTIONS</th>
</tr>
</thead>
</table>
| References: (a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 13A.  
(b) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, p. 18-65 & 18-65A (DDG 51 Class).  
(c) LPD-17 Ship Specification, Addendum 2, HVAC Design Criteria Manual |

<table>
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<tr>
<th>18. NOTES</th>
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<tbody>
<tr>
<td>SAT DEG UNSAT N/A</td>
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<td>☐ ☐ ☐ ☐</td>
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</table>

| 107 (h) Terminals nine inches off the deck exhaust 2/3 of the compartment air quantity and 1/3 of the compartment air quantity was exhausted from the overhead.  [DDG 51 CLASS ONLY] |

<table>
<thead>
<tr>
<th>17. ADDITIONAL INSTRUCTIONS</th>
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</thead>
</table>
| References: (a) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, p. 18-65 & 18-65A (DDG 51 Class).  
NOTE: An approved Departure from Specification (DFS) is required for ships not having exhaust terminals located in the overhead and/or no more than |

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<tr>
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<td>☐ ☐ ☐ ☐</td>
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</table>
106 (g) Exhaust terminals were no more than nine inches above the deck. References: (a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 13A. (b) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, p. 18-65 & 18-65A (DDG 51 Class). (c) LHD Ship Specification, Addendum 2, HVAC Design Criteria Manual, 

105 (f) Exhaust terminal screens were fitted with a quick disconnect from the vent terminal and secured by a 1/16-inch diameter, 7- by 7- wire rope lanyard of compatible material, at least 7 inches in length. References: (a) GSO 2004, Section 512e. 

104 (e) Exhaust terminal had 1-1/2 inch mesh (0.120 inch diameter wire) screens. For openings nine inches in diameter or less, or where the small dimension of a rectangular opening is nine inches or less, 1/2 inch mesh (0.063 inch diameter wire for inter References: (a) NSTM 510, 510-7.1.9. (b) GSO 2004, Section 512e. NOTE: Expanded metal, perforated metal, and other non-wire mesh screens are not authorized. 

103 (d) Supply terminals had eight-mesh (0.035 inch diameter wire) screens. References: (a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 13A. (b) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, p. 18-65 & 18-65A (DDG 51 Class). (c) NSTM 510, 510-7.1.9. NOTE: Expanded metal, perforated metal, and 

102 (c) Minimum negative air pressure (-0.25 inches of water pressure) was maintained when access doors were closed. References: (a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 13A. (b) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, p. 18-65 & 18-65A (DDG 51 Class). (c) LHD Ship Specification, Addendum 2, HVAC Design Criteria Manual, 

101 (b) Mechanical exhaust ventilation system provided one air change every four minutes (i.e., 15 air changes per hour). References: (a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 13A. (b) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, p. 18-65 & 18-65A (DDG 51 Class). (c) LHD Ship Specification, Addendum 2, HVAC Design Criteria Manual, 

100. (a) Mechanical ventilation system had measured airflow per design criteria. References: (a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 13A. (b) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, p. 18-65 & 18-65A (DDG 51 Class). (c) LHD Ship Specification, Addendum 2, HVAC Design Criteria Manual,
# Chapter 1 Checklist Report by Serial

**NEP VT0409**

## 1. EQUIPMENT
Occupational Health Ventilation Systems: JP5 Filter Room [CVN Only].

## 2. MODEL / VERSION OF SYSTEM
General Exhaust Ventilation (GEV).

## 3. PURPOSE
A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304. B. To implement process-focused inspection when feasible to strengthen the capability of the ship's crew. C. Determine the ability of the ship's crew

## 4. REFERENCES
(a) Ship's Heating, Ventilation & Air Conditioning (HVAC) drawings.
(b) Ship-specific HVAC Design Criteria Manual.
(c) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 3I.
(d) American Conference of Governmental Industrial Hygienists

## 5. SUBSYSTEM
Exhaust ventilation terminals/ducts.

## 6. INSPECTORS REQUIREMENTS
Basic understanding of heating, ventilation & air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.

## 7. UNDERWAY
This system is part of OH ventilation under INSURV Event No. VT0040. All of OH ventilation will require two days to complete.

## 8 DESCRIPTION OF INSPECTION
Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure

## 9. PREREQUISITES
Design exhaust air volumes (in CFM) for each space or hood. This information can be found on a ship's Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship's Information Book.

## 10. APPLICABLE INSPECTION PROCEDURES
A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term

## 11. SUPPORT SERVICES
Shoulder bag, flashlight rated as intrinsically safe for hazardous locations, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees)

## 12. LOGISTICS / FUNDING
CVN

## 13. SECURITY CLEAR
UNCLAS CLEAR

## 14. SHIP CLASSES
CVN

## 15. CHECKLIST ITEMS

### 163 (d) If the Filter Room was configured with auxiliary equipment (e.g., pumps), 50 percent of the exhaust came from the terminal nine inches above the deck and the other half from above the pump motor.

References: (a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 3I. NOTE: An approved Departure from Specification (DFS) is required for ships not having exhaust terminals located in the overhead above the pump motor and/or no more

### 162 (c) Exhaust terminals were no more than nine inches above the deck.

References: (a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 3I. NOTE: An approved Departure from Specification (DFS) is required for ships not having an exhaust terminals located no more than nine inches above the deck.

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101 (b) Mechanical exhaust ventilation system provided one air change every 10 minutes (i.e., six air changes per hour).

References: (a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 3I.

100. (a) Mechanical ventilation system had measured airflow per design criteria.

References: (a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 3I.
## Chapter 1 Checklist Report by Serial

### 1. EQUIPMENT


### 2. MODEL / VERSION OF SYSTEM

General Exhaust Ventilation (GEV).

### 3. PURPOSE

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304. B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew. C. Determine the ability of the ship’s crew

### 4. REFERENCES


### 5. SUBSYSTEM

Exhaust ventilation terminals/ducts.

### 6. INSPECTORS REQUIREMENTS

Basic understanding of heating, ventilation & air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.

### 7. UNDERWAY

This system is part of OH ventilation under INSURV Event No. VT0040. All of OH ventilation will require two days to complete.

### 8 DESCRIPTION OF INSPECTION

Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensur

### 9. PREREQUISITES

Design exhaust air volumes (in CFM) for each space or hood. This information can be found on a ship's Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship's Information Book.

### 10. APPLICABLE INSPECTION PROCEDURES

A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term

### 11. SUPPORT SERVICES

Shoulder bag, flashlight rated as intrinsically safe for hazardous locations, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees)

### 12. LOGISTICS / FUNDING

A a

### 13. SECURITY CLEAR

UNCLAS

### 14. SHIP CLASSES

ALL

### 15. CHECKLIST ITEMS

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<tr>
<th>Item</th>
<th>Details</th>
<th>SAT</th>
<th>DEG</th>
<th>UNSAT</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>111 (l)</td>
<td>Mechanical exhaust and supply ventilation systems maintained minimum negative pressure (-0.25 inches of water pressure) when the hatch/door was closed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>110 (k)</td>
<td>Exhaust terminal screens were fitted with a quick disconnect from the vent terminal and secured by a 1/16-inch diameter, 7-by 7- wire rope lanyard of compatible material, at least seven inches in length.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 16. ADDITIONAL INSTRUCTIONS

References:

References:
(a) GSO 2004, Section 512e.
109 (j) Exhaust terminal had 1-1/2 inch mesh (0.120 inch diameter wire) screens. For openings nine inches in diameter or less, or where the small dimension of a rectangular opening is nine inches or less, 1/2 inch mesh (0.063 inch diameter wire for inter

References: (a) GSO 2004, Section 512e. (b) NSTM 510, 510-7.1.9. NOTE: Expanded metal, perforated metal, and other non-wire mesh screens are not authorized.

108 (i) Supply terminals had eight-mesh (0.035 inch diameter wire) screens.


107 (h) Supply terminal air quantities were equal to the exhaust air quantities for each level in the Generator Room. [DDG 51 CLASS ONLY]

References: (a) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, pp. 18-5 & 18-5A (DDG 51 Class).

106 (g) Supply terminals were provided on each level of the Generator Room. [DDG 51 CLASS ONLY]

References: (a) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, pp. 18-5 & 18-5A (DDG 51 Class). NOTE: An approved Departure from Specification (DFS) is required for ships not having supply terminals located on each level of the Generator Room.

105 (f) Supply terminals were provided in the overhead.


104 (e) Exhaust terminals were located in the vicinity of the JP-5 pumps [DDG 51 CLASS, LHD CLASS ONLY].


103 (d) An exhaust terminal was installed no more than nine inches above the deck/grating.


102 (c) Mechanical exhaust ventilation system provided at least one air change every 15 minutes (i.e., four air changes per hour). [DDG 51 CLASS ONLY]

References: (a) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, pp. 18-5 & 18-5A (DDG 51 Class).

101 (b) Mechanical exhaust ventilation system provided at least one air change every six minutes (i.e., 10 air changes per hour).

100. (a) Mechanical ventilation system had measured airflow per design criteria.

References:
(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 3H.
(c) LPD-17 Ship Specification, Addendum 2, HVAC Design Criteria Manual, Crite
### Chapter 1 Checklist Report by Serial

#### NEP VT0411

<table>
<thead>
<tr>
<th>1. EQUIPMENT</th>
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<tr>
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<td>General Exhaust Ventilation (GEV).</td>
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<th>3. PURPOSE</th>
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</thead>
<tbody>
<tr>
<td>A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304. B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew. C. Determine the ability of the ship’s crew</td>
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<thead>
<tr>
<th>4. REFERENCES</th>
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<tr>
<th>5. SUBSYSTEM</th>
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<tr>
<td>Exhaust ventilation terminals/ducts.</td>
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<tr>
<th>6. INSPECTORS REQUIREMENTS</th>
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<td>Basic understanding of heating, ventilation &amp; air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.</td>
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<td>This system is part of OH ventilation under INSURV Event No. VT0040. All of OH ventilation will require two days to complete.</td>
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<tr>
<th>8 DESCRIPTION OF INSPECTION</th>
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</thead>
<tbody>
<tr>
<td>Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure:</td>
</tr>
</tbody>
</table>

1. Design exhaust air volumes (in CFM) for each space. This information can be found on a ship’s Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship’s Information Book. |

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<tr>
<th>9. PREREQUISITES</th>
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<td>A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term</td>
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<tr>
<th>10. SUPPORT SERVICES</th>
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<tbody>
<tr>
<td>Shoulder bag, flashlight, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees), thermal (i.e., heated wire/element) anemometer wit</td>
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<tr>
<th>11. APPLICABLE INSPECTION PROCEDURES</th>
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<tbody>
<tr>
<td>A minimum negative pressure (-0.25 inches of water pressure) was maintained with the access doors closed.</td>
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<th>12. LOGISTICS / FUNDING</th>
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<tr>
<th>13. SECURITY CLEAR</th>
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<tbody>
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<td>UNCLASSIFIED</td>
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<table>
<thead>
<tr>
<th>15. CHECKLIST ITEMS</th>
</tr>
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<tbody>
<tr>
<td>106 (g) Laundry was provided with an independent supply and an independent exhaust ventilation system.</td>
</tr>
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<thead>
<tr>
<th>16. ADDITIONAL INSTRUCTIONS</th>
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Thursday, June 06, 2013
104 (e) Supply ventilation (i.e., spot cooling) at each press operator’s working station was at least 1000 CFM.

References:

103 (d) A grille-type diffusing supply terminal, discharging downward, was installed at each laundry press operator’s station (i.e., spot cooling).

References:
(b) NAVSEA DWG NO: 802-5959327, HVAC Design Criteria Manual, pp. 18-50 & 18-50A (DDG 51 Class).
(c) LHD Ship Specification, Addendum

102 (c) Mechanical exhaust was equal to 115 percent of the supply.

References:
(c) LPD-17 Ship Specification, Addendum 2

101 (b) Mechanical supply ventilation system rate of change was 0.7 minutes (i.e., 85.7 air changes per hour) or less.

References:
(c) LPD-17 Ship Specification, Addendum 2

100. (a) Mechanical ventilation system had measured airflow per design criteria.

References:
(c) LPD-17 Ship Specification, Addendum 2
**Chapter 1 Checklist Report by Serial**

**NEP   VT0412**

<table>
<thead>
<tr>
<th>1. EQUIPMENT</th>
<th>2. MODEL / VERSION OF SYSTEM</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>3. PURPOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304. B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew. C. Determine the ability of the ship’s crew</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. REFERENCES</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>5. SUBSYSTEM</th>
<th>6. INSPECTORS REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laundry Press.</td>
<td>Basic understanding of heating, ventilation &amp; air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7. UNDERWAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>This system is part of OH ventilation under INSURV Event No. VT0040. All of OH ventilation will require two days to complete.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8 DESCRIPTION OF INSPECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9. PREREQUISITES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design exhaust air volumes (in CFM) for each hood. This information can be found on a ship’s Heating, Ventilation &amp; Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship's Information Book.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10. APPLICABLE INSPECTION PROCEDURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design exhaust air volumes (in CFM) for each hood. This information can be found on a ship’s Heating, Ventilation &amp; Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship's Information Book.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>11. SUPPORT SERVICES</th>
<th>12. LOGISTICS / FUNDING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoulder bag, flashlight, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees), thermal (i.e., heated wire/element) anemometer wit</td>
<td>A hood with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust hood</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>13. SECURITY CLEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNCLAS</td>
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</table>

<table>
<thead>
<tr>
<th>14. SHIP CLASSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>15. CHECKLIST ITEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>100. (a) Local exhaust ventilation at each pressing machine was at least 500 CFM.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>16. ADDITIONAL INSTRUCTIONS</th>
</tr>
</thead>
</table>

**Thursday, June 06, 2013**
### 1. EQUIPMENT


### 2. MODEL / VERSION OF SYSTEM

General Exhaust Ventilation (GEV).

### 3. PURPOSE

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304. B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew. C. Determine the ability of the ship’s crew

### 4. REFERENCES


### 5. SUBSYSTEM

Exhaust ventilation terminals/ducts.

### 6. INSPECTOR'S REQUIREMENTS

Basic understanding of heating, ventilation & air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.

### 7. UNDERWAY

This system is part of OH ventilation under INSURV Event No. VT0040. All of OH ventilation will require two days to complete.

### 8. DESCRIPTION OF INSPECTION

Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure

Design exhaust air volumes (in CFM) for each space or hood. This information can be found on a ship's Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship's Information Book.

### 12. LOGISTICS / FUNDING

A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term

### 14. SUPPORT SERVICES

Shoulder bag, flashlight rated as intrinsically safe for hazardous locations, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees)

### 16. CHECKLIST ITEMS

<table>
<thead>
<tr>
<th>107 (h) A minimum negative pressure (-0.25 inches of water pressure) was maintained with the access doors closed. [LPD CLASS]</th>
<th>References: (a) LPD-17 Ship Specifications, Addendum 2, HVAC Design Criteria Manual, Criteria Sheet 65. NOTE: For purposes of an INSURV inspection, pressure differential can be determined by either qualitative (i.e., direction of air flow noted at an open access) or quantitative methods.</th>
<th>SAT</th>
<th>DEG</th>
<th>UNSAT</th>
<th>N/A</th>
</tr>
</thead>
</table>

| 106 (g) Supply terminals were installed in the overhead. | References: (a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheets 11A and 11B. (b) LPD-17 Ship Specifications, Addendum 2, HVAC Design Criteria Manual, Criteria Sheet 65. NOTE: An approved Departure from Specification (DFS) is requir | SAT | DEG | UNSAT | N/A |
105 (f) Exhaust terminals were installed no more than nine inches above the deck.

References:
(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheets 11A and 11B.
(b) LPD-17 Ship Specifications, Addendum 2, HVAC Design Criteria Manual, Criteria Sheet 65.

104 (e) Flame arrester was installed on the intake side of the exhaust fan outside the compartment.

References:
(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheets 11A and 11B.
(b) LPD-17 Ship Specifications, Addendum 2, HVAC Design Criteria Manual, Criteria Sheet 65.

103 (d) Mechanical exhaust ventilation provided one air change every one minute (i.e., 60 air changes per hour) in the MOGAS Ready Service/Bladder Stowage Space. [LPD]

References:

102 (c) Mechanical exhaust ventilation provided at least one air change every 10 minutes (i.e., six air changes per hour) in the MOGAS/Gasoline Filter Room, MOGAS/Gasoline Pump Room, or MOGAS/Gasoline Fueling Station (not open directly to weather) (only f)

References:
(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheets 11A and 11B.
(b) LPD-17 Ship Specifications, Addendum 2, HVAC Design Criteria Manual, Criteria Sheet 65.

101 (b) Mechanical exhaust ventilation provided at least one air change every four minutes (i.e., 15 air changes per hour) in the MOGAS/Gasoline Filter Room, MOGAS/Gasoline Pump Room, or MOGAS/Gasoline Fueling Station (not open directly to weather) (only)

References:
(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheets 11A and 11B.
(b) LPD-17 Ship Specifications, Addendum 2, HVAC Design Criteria Manual, Criteria Sheet 65.

100. (a) Mechanical ventilation system had measured airflow per design criteria.

References:
(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheets 11A and 11B.
(b) LPD-17 Ship Specifications, Addendum 2, HVAC Design Criteria Manual, Criteria Sheet 65.
# Chapter 1 Checklist Report by Serial

**NEP** VT0414

## 1. EQUIPMENT


## 2. MODEL / VERSION OF SYSTEM

General Exhaust Ventilation (GEV).

## 3. PURPOSE

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304.  
B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew.  
C. Determine the ability of the ship’s crew

## 4. REFERENCES

(a) Ship’s Heating, Ventilation & Air Conditioning (HVAC) drawings.  
(b) Ship-specific HVAC Design Criteria Manual.  
(c) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 13H.  
(d) LPD-17 Ship Specification, Addendum 2, HVAC Design Criteria

## 5. SUBSYSTEM

Exhaust ventilation terminals/ducts (and supply ventilation terminals/ducts for compartments with blowout air systems).

<table>
<thead>
<tr>
<th>6. INSPECTORS REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic understanding of heating, ventilation &amp; air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.</td>
</tr>
</tbody>
</table>

## 7. UNDERWAY

This system is part of OH ventilation under INSURV Event No. VT0040. All of OH ventilation will require two days to complete.

## 8 DESCRIPTION OF INSPECTION

Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure

<table>
<thead>
<tr>
<th>9. PREREQUISITES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design exhaust air volumes (in CFM) for each space or hood. This information can be found on a ship’s Heating, Ventilation &amp; Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship’s Information Book.</td>
</tr>
</tbody>
</table>

## 10. APPLICABLE INSPECTION PROCEDURES

A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term

## 11. SUPPORT SERVICES

Shoulder bag, flashlight rated as intrinsically safe for hazardous locations, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees)

<table>
<thead>
<tr>
<th>12. LOGISTICS / FUNDING</th>
</tr>
</thead>
<tbody>
<tr>
<td>A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term</td>
</tr>
</tbody>
</table>

## 13. SECURITY CLEAR

UNCLAS

## 14. SHIP CLASSES

ALL

<table>
<thead>
<tr>
<th>15. SHIP CLASSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
</tr>
</tbody>
</table>

## 16. CHECKLIST ITEMS

<table>
<thead>
<tr>
<th>17. ADDITIONAL INSTRUCTIONS</th>
<th>SAT</th>
<th>DEG</th>
<th>UNSAT</th>
<th>N/A</th>
<th>18. NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>102 (c) Supply and exhaust systems were operable. References: (a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 13H.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>101 (b) Mechanical supply/blowout ventilation system provided at least one air change every eight minutes (i.e., 7.5 air changes per hour). References: (a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 13H.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>100. (a) Mechanical ventilation system had measured airflow per design criteria. References: (a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 13H.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
</tbody>
</table>
# Chapter 1 Checklist Report by Serial

**NEP VT0415**

## 1. EQUIPMENT

Occupational Health Ventilation Systems: Oil Test Laboratory.

## 2. MODEL / VERSION OF SYSTEM

General Exhaust Ventilation (GEV).

## 3. PURPOSE

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304.

B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew.

C. Determine the ability of the ship’s crew.

## 4. REFERENCES

(a) Ship’s Heating, Ventilation & Air Conditioning (HVAC) drawings.

(b) Ship-specific HVAC Design Criteria Manual.

(c) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 4A.

(d) LHD Ship Specification, Addendum 2, HVAC Design Criteria.

## 5. SUBSYSTEM

Exhaust ventilation terminals/ducts.

## 6. INSPECTORS REQUIREMENTS

Basic understanding of heating, ventilation & air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.

## 7. UNDERWAY

This system is part of OH ventilation under INSURV Event No. VT0040. All of OH ventilation will require two days to complete.

## 8 DESCRIPTION OF INSPECTION

Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure:

- Design exhaust air volumes (in CFM) for each space. This information can be found on a ship’s Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship's Information Book.

## 9. PREREQUISITES

A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term.

## 10. APPLICABLE INSPECTION PROCEDURES

Ensure ventilation terminals are operational. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure:

- Shoulder bag, flashlight rated as intrinsically safe for hazardous locations, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees).

## 11. SUPPORT SERVICES

- A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term.

## 12. LOGISTICS / FUNDING

A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term.

## 13. SECURITY CLEAR

UNCLAS CLEAR

## 14. SHIP CLASSES

- ALL

## 15. CHECKLIST ITEMS

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>(b) Spaces using solvents or volatile liquids had a mechanical general exhaust ventilation system that provided at least one air change every six minutes (i.e., 10 air changes per hour).</td>
</tr>
<tr>
<td>100</td>
<td>(a) Mechanical ventilation system had measured airflow per design criteria.</td>
</tr>
</tbody>
</table>

## 16. ADDITIONAL INSTRUCTIONS

<table>
<thead>
<tr>
<th>References</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) NAVSEA 0938-LP-018-00010 - HVAC Design Criteria Manual, Criteria Sheet 4A.</td>
<td>SAT DEG UNSAT N/A</td>
</tr>
<tr>
<td>(c) LHD Ship Specification, Addendum 2, HVAC Design Criteria</td>
<td></td>
</tr>
</tbody>
</table>

## 17. NOTES

- | SAT DEG UNSAT N/A |
# Chapter 1 Checklist Report by Serial

**NEP** VT0416

## 1. EQUIPMENT

Occupational Health Ventilation Systems: Oil & Water Test Laboratory Welding-Type Bench Hood.

## 2. MODEL / VERSION OF SYSTEM

Local Exhaust Ventilation (LEV).

## 3. PURPOSE

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304. B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew. C. Determine the ability of the ship’s crew

## 4. REFERENCES

(a) Ship’s Heating, Ventilation & Air Conditioning (HVAC) drawings.
(b) Ship-specific HVAC Design Criteria Manual.
(c) LHD Ship Specification, Addendum 2, HVAC Design Criteria Manual, Criteria Sheet 81 and Figure 9.
(d) NEHC-TM6290.91-2 Rev. B "Industrial Ventilation and Local Exhaust Ventilation (LEV).

## 5. SUBSYSTEM

Welding-type bench hood.

## 6. INSPECTORS REQUIREMENTS

Basic understanding of heating, ventilation & air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.

## 7. UNDERWAY

This system is part of OH ventilation under INSURV Event No. VT0040. All of OH ventilation will require two days to complete.

## 8. DESCRIPTION OF INSPECTION

Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure:

- Design exhaust air volumes (in CFM) for each hood. This information can be found on a ship’s Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship’s Information Book.

## 9. PREREQUISITES

A hood with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust hood.

## 10. APPLICABLE INSPECTION PROCEDURES

A shoulder bag, flashlight rated as intrinsically safe for hazardous locations, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees).

## 11. SHIP CLASSES

LHD 5 AND FOLLOW CLASS ONLY

## 12. LOGISTICS / FUNDING

A hood with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust hood.

## 13. SECURITY CLEAR

UNCLAS

## 14. SUPPORT SERVICES

A hood with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust hood.

## 15. CHECKLIST ITEMS

- **104 (e)** Label plate affixed to the bench hood read:
  "OPERATE HOOD EXHAUST ONLY WHEN FLASH POINT TESTING OR WORKING WITH HAZARDOUS PRODUCTS".

## 16. ADDITIONAL INSTRUCTIONS

- References:
  (a) LHD Ship Specification, Addendum 2, HVAC Design Criteria Manual, Criteria Sheet 81 and Figure 9.

## 17. SHIP CLASSES

LHD 5 AND FOLLOW CLASS ONLY

## 18. NOTES

<table>
<thead>
<tr>
<th>SAT</th>
<th>DEG</th>
<th>UNSAT</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

Thursday, June 06, 2013
101 (b) Make-up air supply fan was interlocked with the hood exhaust fan so that it was in operation only when the hood exhaust was in use.

References: (a) LHD Ship Specification, Addendum 2, HVAC Design Criteria Manual, Criteria Sheet 81 and Figure 9.

100. (a) Welding-type bench hood provided 350 CFM per linear foot of hood slot length.

References: (a) LHD Ship Specification, Addendum 2, HVAC Design Criteria Manual, Criteria Sheet 81 and Figure 9.
## Chapter 1 Checklist Report by Serial

**NEP** VT0417

### 1. EQUIPMENT
Occupational Health Ventilation Systems: Oil Test Laboratory Sash Hood.

### 2. MODEL / VERSION OF SYSTEM
Local Exhaust Ventilation (LEV).

### 3. PURPOSE
A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304. B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew. C. Determine the ability of the ship’s crew

### 4. REFERENCES
(a) Ship’s Heating, Ventilation & Air Conditioning (HVAC) drawings.
(b) Ship-specific HVAC Design Criteria Manual.
(c) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 4A.
(d) American Conference of Governmental Industrial Hygienists

### 5. SUBSYSTEM
Vertical or horizontal sash airfoil hood.

### 6. INSPECTORS REQUIREMENTS
Basic understanding of heating, ventilation & air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.

### 7. UNDERWAY
This system is part of OH ventilation under INSURV Event No. VT0040. All of OH ventilation will require two days to complete.

### 8 DESCRIPTION OF INSPECTION
Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure:

- Design exhaust air volumes (in CFM) for each hood. This information can be found on a ship’s Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship’s Information Book.

### 9. PREREQUISITES
A hood with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust hood.

### 10. APPLICABLE INSPECTION PROCEDURES
Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure:

- Design exhaust air volumes (in CFM) for each hood. This information can be found on a ship’s Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship’s Information Book.

### 11. SUPPORT SERVICES
Shoulder bag, flashlight rated as intrinsically safe for hazardous locations, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees)

### 12. LOGISTICS / FUNDING
A hood with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust hood

### 13. SECURITY CLEAR
UNCLASSIFIED CLEAR

### 14. SHIP CLASSES
All

### 15. SHIP CLASSES
All

### 16. CHECKLIST ITEMS

<table>
<thead>
<tr>
<th>CHECKLIST ITEMS</th>
<th>SAT</th>
<th>DEG</th>
<th>UNSAT</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>104 (e) Hood was installed over test table and chemical sink and was intact.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>103 (d) Supply ventilation terminal was not located immediately in front of hood.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

### 17. ADDITIONAL INSTRUCTIONS
References:
(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 4A.
(b) American Conference of Governmental Industrial Hygienists (ACGIH) "Industrial Ventilation - A Manual of Recommended Practice for Design" (26th ed.), Figures VS-104 (e).
(c) American Conference of Governmental Industrial Hygienists (ACGIH) "Industrial Ventilation - A Manual of Recommended Practice for Design" (26th ed.), Figures VS-103 (d).
102 (c) Equipment inside hood was not located closer than six inches to face of hood.

101 (b) Vertical or horizontal sash airfoil hood: If hood sash was supposed to be partially closed for the operation, the hood was so labeled and the appropriate closure point was clearly indicated.

100. (a) Vertical or horizontal sash airfoil hood: Had 80-100 FPM full open area face velocity (sash height must be adjusted and marked to 80-100 FPM face velocity if it cannot be achieved with full open face area).

References:
(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 4A.
(b) American Conference of Governmental Industrial Hygienists (ACGIH) "Industrial Ventilation - A Manual of Recommended Practice for Design" (26th ed.), Figures VS-
# Chapter 1 Checklist Report by Serial

**NEP**  VT041B

## 1. EQUIPMENT

Occupational Health Ventilation Systems: Aviation Oil Analysis Laboratory Spectrometer.

## 2. MODEL / VERSION OF SYSTEM

Local Exhaust Ventilation (LEV).

## 3. PURPOSE

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304.  
B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew.  
C. Determine the ability of the ship’s crew

## 4. REFERENCES

(a) Ship’s Heating, Ventilation & Air Conditioning (HVAC) drawings.  
(b) Ship-specific HVAC Design Criteria Manual.  
(c) LHD Ship Specification, Addendum 2, HVAC Design Criteria Manual, Criteria Sheet 81 and Figure 9.  

## 5. SUBSYSTEM

Spectrometer.

## 6. INSPECTORS REQUIREMENTS

Basic understanding of heating, ventilation & air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.

## 8. DESCRIPTION OF INSPECTION

Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure:

- Design exhaust air volumes (in CFM) for each hood. This information can be found on a ship’s Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship’s Information Book.

## 11. APPLICABLE INSPECTION PROCEDURES

CVN AND LHD CLASS ONLY

## 12. LOGISTICS / FUNDING

A hood with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust hood.

## 14. SUPPORT SERVICES

Shoulder bag, flashlight rated as intrinsically safe for hazardous locations, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees)

## 15. SHIP CLASSES

CVN AND LHD CLASS ONLY

## 16. CHECKLIST ITEMS

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Additional Instructions</th>
<th>SAT</th>
<th>DEG</th>
<th>UNSAT</th>
<th>N/A</th>
</tr>
</thead>
</table>
| 103 (d) | Duct exhausted 50 CFM. | References: (a) LHD Ship Specification, Addendum 2, HVAC Design Criteria Manual, Criteria Sheet 81 and Figure 9.  
(b) NAVSEA DRAWING 802-6337687 - HVAC Design Criteria Manual for CVN 77, Criteria Sheet 215. | ☐ | ☐ | ☐ | ☐ |
| 102 (c) | Duct was routed to the compartment’s exhaust ventilation terminal. | References: (a) LHD Ship Specification, Addendum 2, HVAC Design Criteria Manual, Criteria Sheet 81 and Figure 9.  
(b) NAVSEA DRAWING 802-6337687 - HVAC Design Criteria Manual for CVN 77, Criteria Sheet 215. | ☐ | ☐ | ☐ | ☐ |
101 (b) Duct was connected to exhaust discharge from Spectrometer with flexible connector,

References:
(a) LHD Ship Specification, Addendum 2, HVAC Design Criteria Manual, Criteria Sheet 81 and Figure 9.
(b) NAVSEA DRAWING 802-6337687 - HVAC Design Criteria Manual for CVN 77, Criteria Sheet 215.

100. (a) Spectrometer was installed with a four-inch diameter duct.

References:
(a) LHD Ship Specification, Addendum 2, HVAC Design Criteria Manual, Criteria Sheet 81 and Figure 9.
(b) NAVSEA DRAWING 802-6337687 - HVAC Design Criteria Manual for CVN 77, Criteria Sheet 215.
Chapter 1 Checklist Report by Serial

NEP  VT0419

1. EQUIPMENT

2. MODEL / VERSION OF SYSTEM
General Exhaust Ventilation (GEV).

3. PURPOSE
A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304. B. To implement process-focused inspection when feasible to strengthen the capability of the ship's crew. C. Determine the ability of the ship's crew

4. REFERENCES
(a) Ship's Heating, Ventilation & Air Conditioning (HVAC) drawings. (b) Ship-specific HVAC Design Criteria Manual. (c) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 3C. (d) American Conference of Governmental Industrial Hygienists

5. SUBSYSTEM
Exhaust ventilation terminals/ducts (and supply ventilation terminals/ducts for compartments with blowout air systems).

6. INSPECTORS REQUIREMENTS
Basic understanding of heating, ventilation & air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.

7. UNDERWAY
This system is part of OH ventilation under INSURV Event No. VT0040. All of OH ventilation will require two days to complete.

8 DESCRIPTION OF INSPECTION
Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure:

9. PREREQUISITES
Design exhaust air volumes (in CFM) for each space or hood. This information can be found on a ship's Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship's Information Book.

10. APPLICABLE INSPECTION PROCEDURES
Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure:

11. SUPPORT SERVICES
Shoulder bag, flashlight, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees), thermal (i.e., heated wire/element) anemometer with

12. LOGISTICS / FUNDING
A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term

13. SECURITY CLEAR
UNCLAS

14. SHIP CLASSES
All

15. SHIP CLASS
All

16. CHECKLIST ITEMS

105 (f) Supply air was filtered.

104 (e) An exhaust terminal was provided no more than nine inches above the deck near the filling bench.

17. ADDITIONAL INSTRUCTIONS

105 (f) Supply air was filtered.

104 (e) An exhaust terminal was provided no more than nine inches above the deck near the filling bench.

18. NOTES

References:
(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 3C.
103 (d) Mechanical supply ventilation system provided one air change every six minutes (i.e., 10 air changes per hour) in the Fill/Producer/Refrigeration/Stowage Rooms on or above the weather decks.

References: (a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 3C.

102 (c) Mechanical supply ventilation system provided one air change every one minute (i.e., 60 air changes per hour) in Fill/Producer/Refrigeration/Stowage Rooms below the weather decks.

References: (a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 3C.

101 (b) Mechanical exhaust ventilation system provided one air change every one minute (i.e., 60 air changes per hour) in the O2N2 Compressor Room.

References: (a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 3C.

100. (a) Mechanical ventilation system had measured airflow per design criteria.

References: (a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 3C.
# Chapter 1 Checklist Report by Serial

## 1. EQUIPMENT


## 2. MODEL / VERSION OF SYSTEM

General Exhaust Ventilation (GEV).

## 3. PURPOSE

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, § 7304. B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew. C. Determine the ability of the ship’s crew

## 4. REFERENCES


## 5. SUBSYSTEM

Exhaust ventilation terminals/ducts.

## 6. INSPECTORS REQUIREMENTS

- Basic understanding of heating, ventilation & air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.

## 7. UNDERWAY

This system is part of OH ventilation under INSURV Event No. VT0040. All of OH ventilation will require two days to complete.

## 8 DESCRIPTION OF INSPECTION

Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure Design exhaust air volumes (in CFM) for each space or hood. This information can be found on a ship’s Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship’s Information Book.

## 9. PREREQUISITES

A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term

## 10. APPLICABLE INSPECTION PROCEDURES

- Shoulder bag, flashlight rated as intrinsically safe for hazardous locations, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees)

## 11. SUPPORT SERVICES

All

## 12. LOGISTICS / FUNDING

A space with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust term

## 13. SECURITY CLEAR

UNCLASSIFIED

## 14. SHIP CLASSES

All

## 15. ADDITIONAL INSTRUCTIONS

### 16. CHECKLIST ITEMS

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>References</th>
<th>SAT</th>
<th>DEG</th>
<th>UNSAT</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>107 (h)</td>
<td>An exhaust terminal was installed in the overhead.</td>
<td>(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 13A. (b) NAVSEA DWG NO:</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>References</th>
<th>SAT</th>
<th>DEG</th>
<th>UNSAT</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>106 (g)</td>
<td>Exhaust terminals were no more than nine inches above the deck.</td>
<td>(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheet 13A. (b) NAVSEA DWG NO:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
105 (f) Exhaust terminal screens were fitted with a quick disconnect from the vent terminal and secured by a 1/16-inch diameter, 7- by 7- wire rope lanyard of compatible material, at least 7 inches in length.

References: (a) GSO 2004, Section 512e.

104 (e) Exhaust terminal had 1-1/2 inch mesh (0.120 inch diameter wire) screens. For openings nine inches in diameter or less, or where the small dimension of a rectangular opening is nine inches or less, 1/2 inch mesh (0.063 inch diameter wire for inter

References: (a) GSO 2004, Section 512e. (b) NSTM 510, 510-7.1.9. NOTE: Expanded metal, perforated metal, and other non-wire mesh screens are not authorized.

103 (d) Supply terminals had eight-mesh (0.035 inch diameter wire) screens.


102 (c) Minimum negative air pressure (-0.25 inches of water pressure) was maintained when access doors were closed.


101 (b) Mechanical exhaust ventilation system provided one air change every four minutes (i.e., 15 air changes per hour).


100. (a) Mechanical ventilation system had measured airflow per design criteria.

# Chapter 1 Checklist Report by Serial

**NEP**  VT0421

## 1. EQUIPMENT


## 2. MODEL / VERSION OF SYSTEM

General Supply and Exhaust Ventilation.

## 3. PURPOSE

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, S 7304.  B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew.  C. Determine the ability of the ship’s crew

## 4. REFERENCES


## 5. SUBSYSTEM

Supply and exhaust ventilation terminals.

## 6. INSPECTORS REQUIREMENTS

Basic understanding of heating, ventilation & air conditioning (HVAC) systems; and, a knowledge of the ventilation survey standards and methods described in the references section of this guide.

## 7. UNDERWAY

This system is part of OH ventilation under INSURV Event No. VT0040. All of OH ventilation will require two days to complete.

## 8. DESCRIPTION OF INSPECTION

## 9. PREREQUISITES

## 10. APPLICABLE INSPECTION PROCEDURES

## 11. LOGISTICS / FUNDING

If a ventilation terminal did not meet specifications, it is a Priority 2 deficiency for the space with an EOC score of up to 0.9. Water that is dripping, splashing, or being blown onto electric or electronic equipment is a Priority 1 Safety deficiency with a maximum EOC score up to 0.2.

## 12. SECURITY CLEAR

UNCLASSIFIED

## 13. SUPPORT SERVICES

Shoulder bag, flashlight rated as intrinsically safe for hazardous locations, telescoping inspection mirror, hearing protection, and self-retracting tape measure.

## 14. SHIP CLASSES

ALL

## 15. CHECKLIST ITEMS

<table>
<thead>
<tr>
<th>SAT</th>
<th>DEG</th>
<th>UNSAT</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</table>

### 15.1.1 105 (f) Terminal was arranged to prevent water from dripping, splashing, or being blown onto electric or electronic equipment; prevent disturbing the capture range of hoods made especially for the equipment; prevent short circuiting of air between supply

References: (a) GSO 2004, Section 512e. Scoring: Water that is dripping, splashing, or being blown onto electric or electronic equipment is a Priority 1 Safety deficiency with a maximum EOC score of up to 0.2.

### 15.1.2 104 (e) Exhaust terminal screens were fitted with a quick disconnect from the vent terminal and secured by a 1/16-inch diameter, 7- by 7- wire rope lanyard of compatible material, at least seven inches in length.

References: (a) GSO 2004, Section 512e.

### 16. ADDITIONAL INSTRUCTIONS

Thursday, June 06, 2013
103 (d) Ventilation terminals were clean and unclogged. References: (a) MIP 6641, A-18. (b) GSO 2004, Section 512e. (c) NSTM 510, 510-7.1.9.

102 (c) Ventilation diffusers were not damaged or missing. References: (a) MIP 6641, A-18. (b) GSO 2004, Section 512e. (c) NSTM 510, 510-7.1.9.

101 (b) Exhaust terminals had 1-1/2 inch mesh (0.120 inch diameter wire) screens. For openings nine inches in diameter or less, or where the small dimension of a rectangular opening is nine inches or less, 1/2 inch mesh (0.063 inch diameter wire for inte References: (a) GSO 2004, Section 512e. (b) NSTM 510, 510-7.1.9. NOTE: Expanded metal, perforated metal, and other non-wire mesh screens are not authorized.

100. (a) Exhaust ventilation terminal mesh screens were present. References: (a) MIP 6641, A-18. (b) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual. (c) GSO 2004, Section 512e. (d) NSTM 510, 510-7.1.9. NOTE: Expanded metal, perforated metal, and other non-wire mesh screens are not authorized.
# Chapter 1 Checklist Report by Serial

## NEP VT0422

### 1. EQUIPMENT


### 2. MODEL / VERSION OF SYSTEM

Local Exhaust Ventilation (LEV).

### 3. PURPOSE

A. To conduct a compliance-focused inspection IAW SECNAVINST 5040.3A and U.S. Code, Title 10, S 7304.  
B. To implement process-focused inspection when feasible to strengthen the capability of the ship’s crew.  
C. Determine the ability of the ship’s crew

### 4. REFERENCES

(a) Ship’s Heating, Ventilation & Air Conditioning (HVAC) drawings.  
(b) Ship-specific HVAC Design Criteria Manual.  
(a) Ship’s Heating, Ventilation & Air Conditioning (HVAC) drawings.  
(b) Ship-specific HVAC Design Criteria Manual.  
(c) NAVSEA 0938-LP-018-00

### 5. SUBSYSTEM

Flexible Welding Exhaust Hood.

### 6. INSPECTORS REQUIREMENTS

Basic understanding of heating, ventilation & air conditioning (HVAC) systems, a proficient use of ventilation survey equipment, and a knowledge of the ventilation survey standards and methods described in the references section of this guide.

### 7. UNDERWAY

This system is part of OH ventilation under INSURV Event No. VT0040. All of OH ventilation will require two days to complete.

### 8 DESCRIPTION OF INSPECTION

Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure Design exhaust air volumes (in CFM) for each hood. This information can be found on a ship’s Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship's Information Book.

### 9. PREREQUISITES

A hood with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust hood.

### 10. APPLICABLE INSPECTION PROCEDURES

Ensure all supply and exhaust ventilation systems for the space are operating. If a ship is outfitted with a Chemical Protective System (CPS), and that system is not always set during routine daily operations (e.g., CPS on DDGs is always set), then ensure Design exhaust air volumes (in CFM) for each hood. This information can be found on a ship’s Heating, Ventilation & Air Conditioning (HVAC) drawing, in a HVAC Design Criteria Manual, or in a Ship's Information Book.

### 11. SUPPORT SERVICES

Shoulder bag, flashlight, telescoping inspection mirror, hearing protection, rotating/swinging vane anemometer (4-inch diameter vane preferred) with an articulating wand (i.e., bendable up to 90 degrees), thermal (i.e., heated wire/element) anemometer with

### 12. LOGISTICS / FUNDING

A hood with a percent of design at or below 10 percent will be considered as having a zero air volume (it can be possible that exhaust volumes at or below 10 percent are caused by an inoperative exhaust fan and supply air exiting through the exhaust hood.

### 13. SECURITY CLEAR

UNCLAS

### 14. SHIP CLASSES

ALL

### 15. CHECKLIST ITEMS

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>SAT</th>
<th>DEG</th>
<th>UNSAT</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>106 (g)</td>
<td>Hood was able to reach entire work surface.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>105 (f)</td>
<td>Hood had a clean screen. [Only CVN 71 and later of the CVN 68 Class; CG 47, DDG 51, DDG 993, LHD 1, LPD 17, FFG 7, MHC 51, and PC 1 Classes]</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

### 16. ADDITIONAL INSTRUCTIONS

References:  
(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheets 4A (3.12) and 4D (3.1), and Figure 4A.  
(b) NAVSEA DWG 802-5959327, Revision BD, HVAC Design Criteria Manual, Criteria Sheet 18-57 and Figure 18-6 (DDG 51 Class).  
(c) LP

References:  
(a) MIP 6641/005, A-18.
<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>104 (e)</td>
<td>Label plate was installed on face of hood with the following instructions: &quot;LOCATE OPENING OF THIS HOOD WITHIN 7-1/2 INCHES OF WORKING POINT.&quot;</td>
<td>References:(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheets 4A (3.12) and 4D (3.1), and Figure 4A.</td>
</tr>
<tr>
<td>103 (d)</td>
<td>Label plate was installed on face of hood with the following instructions: &quot;OPERATE EXHAUST SYSTEM AND COMPANION SUPPLY SYSTEM AT HIGH SPEED WHILE USING THIS HOOD.&quot;</td>
<td>References:(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheets 4A (3.12) and 4D (3.1), and Figure 4A.</td>
</tr>
<tr>
<td>102 (c)</td>
<td>Flexible hose had a six-inch inner diameter.</td>
<td>References:(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheets 4A (3.12) and 4D (3.1), and Figure 4A.</td>
</tr>
<tr>
<td>101 (b)</td>
<td>Hood face volume measured at least 300 CFM.</td>
<td>References:(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheets 4A (3.12) and 4D (3.1), and Figure 4A. (b) NAVSEA DWG 802-5959327, Revision BD, HVAC Design Criteria Manual, Criteria Sheet 18-57 and Figure 18-6 (DDG 51 Class).</td>
</tr>
<tr>
<td>100. (a)</td>
<td>Welding slab area had a mechanical exhaust hood installed per Figure 4A of Criteria Sheets 4A or 4D.</td>
<td>References:(a) NAVSEA 0938-LP-018-0010 - HVAC Design Criteria Manual, Criteria Sheets 4A (3.12) and 4D (3.1), and Figure 4A. (b) NAVSEA DWG 802-5959327, Revision BD, HVAC Design Criteria Manual, Criteria Sheet 18-57 and Figure 18-6 (DDG 51 Class). (c) LP</td>
</tr>
</tbody>
</table>